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ORIGINAL ARTICLES.

LITHIASIS IN PREGNANCY.

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When honored by an invitation to contribute a paper to the proceedings of the Obstetrical Section of the American Medical Association, I was anxious to select a topic which, while possessing some novelty and belonging to the wider domain of General Medicine, might be useful and pertinent to the subjects within the province of this department.

It is some years since first I observed the frequent manifestations of certain symptoms during pregnancy, and their subsequent persistence, that could be explained most satisfactorily by ascribing them to the influence of the lithic acid diathesis. Additional observation and reflection having satisfied me that the association was more than coincidental, I have concluded to submit my speculations to the consideration of this Section. That many observers have noticed the association of lithiasis with pregnancy is beyond question, but I am not aware of any attempt to present the facts and inferences in continuity. It is not so evident, either, that the profession generally has recognized the affiliation or the tendency which the phenomena of gestation have to develop this dyscrasia. My intention is to review the characteristics of lithiasis, their analogous manifestations in pregnancy with the physiological processes in the last-mentioned which favor their development, and thus I shall endeavor to establish a definite relation between the two conditions.

For the sake of continuity I will briefly recapitulate a few generally recognized principles concerning lithiasis. It is a diathesis associated with the presence of an excess of lithic, or uric acid in the system, and made manifest by very varied phenomena, affecting almost every structure and function. Uric acid is derived from the proteid tissues and from the albuminous or nitrogenous foods. The manner of the formation of uric acid is a subject as yet involved in much obscurity, but it is generally conceded that, when it exceeds the normal quantity, marked disturbance of the structure or the functions of one or more important organs is the result. Primarily or secondarily the liver, stomach, kidneys, nervous system, lungs, and the blood are severally or collectively involved, although in many instances no departure from the normal condition can be detected in some one or more of these factors. Lithiasis is intimately associated with those important excrementitious substances, urea and the urates, which result from and, other things being equal, represent in constant proportions the constructive and the destructive cell-changes of the system. The intermediate link between the presence of uric acid and the manifestations of lithiasis is the deposition of the former in the affected tissues or of the salts produced by its combination with some of the inorganic elements, notably that with sodium. The resulting disturbance of the functions or the nutrition of the invaded organs produces the symptoms of the diathesis, and verily their name is legion.

The specific gravity and the alkalinity of the blood is diminished and the excrementitious matters, especially the uric acid and the urates, are increased in quantity, the alkalinity of the blood is less than normal and the fibrin is increased. The objective symptoms of anæmia also are frequently present and, naturally, they are associated with a reduction of the red corpuscles. The results of these abnormal conditions of the blood are very numerous, eczema, pruritus, phlebitis, neuralgia, myalgia, œdema and dropsy being prominent among the many. In the vascular system the arterial tension is increased and cardiac hypertrophy, simple or complicated, is a frequent consequence. Palpitation, irregularity of action, syncope and other diseased cardiac conditions are often present.

It is reasonable to suppose that respiration is involved in an important manner, as uric acid is the result of arrested oxidation of the nitrogenous elements which otherwise are convertible into the easily eliminated urea. The most frequent examples of disturbance of the respiration are dyspnœa, irritable cough and hiccough.

The connection between lithiasis and the digestive system is close, and its manifestations are marked and frequent. Without dwelling upon the causal influence of gastric acidity and imperfect digestion, we must notice their frequency in lithiasis. The various actions and secretions are deranged, producing morbid appetite, gastralgia acid and other eructations, nausea, vomiting, irritative diarrhœa or constipation, tympanites, hæmorrhoids, and several other symptoms.

The liver suffers more from functional than from structural derangement, although inflammatory changes are not infrequent. We must not forget that one of the best sustained theories of lithiasis attributes this morbid condition to the functional disturbance of this organ, and we also witness biliousness, jaundice, and hepatitis. That the spleen is involved in lithiasis is indicated by the constant presence within it of a large quantity of uric acid.

The relation between lithiasis and the kidneys is universally recognized, although in some rare instances no structural changes can be detected. As a rule, however, some of the varied phenomena of inflammation, from hyperæmia to cirrhosis, degeneration or a deposition of the solid constituents of the urine can be demonstrated, and the character of that fluid is greatly and variously modified. The phenomena associated with the urinary organs are too numerous to be detailed, but in definite relation with lithiasis are abnormal polyuria and diabetes, suppression and retention of urine, irritable bladder and cystitis.

Numerous nervous phenomena appear in lithiasis which may be collectively attributed to the development of increased irritability and malnutrition. Psychical, sensational, spasmodic and trophic phenomena are constantly witnessed and appear to stand convertibly as cause and effect with the disease. Manifestations of these nervous perturbations are frequently witnessed in the form of convulsions, cramps, myalgia, neuralgia, hysteria and mental aberration.

The changes produced by lithiasis in the skeletal structure and those of the connective tissue series generally, are characteristic. The bones suffer by the formation of nodes, laminæ and exostoses, the ligaments and fasciæ by the deposition of the urates and the consequent inflammation, contraction and rigidity. The synovial membranes are affected with inflammation, adhesions and induration.

The influences which predispose to lithiasis are many, and it would appear that a marked departure, either idiopathic or acquired, from the normal standard of the function of any important organ determines its development. It is also significant that the influence of a single manifestation of lithiasis is liable to be followed by serious and far-reaching consequences, indicating the establishment of the diathesis.

If we now turn our attention to the phenomena of pregnancy, we cannot fail to observe a remarkable coincidence between the diseases as well as the pathology of that condition and of lithiasis. All those features to which I have alluded when reviewing lithiasis are frequently seen in pregnancy. The structural changes which are present in the former are of common occurrence, and the physiological conditions of gestation are favorable to its development. In the etiology of the two classes of diseases the parallel is sustained, as in both we have the same hæmic influences, the same irritable or "explosive" state of the nervous system, and the same renal and digestive disturbances. In pregnancy we find additional and potent factors in the increased metabolic energy, and the mechanical conditions which, if present in a lithæmic individual, would most probably contribute to the development of the disease. Those morbid conditions which are ascribed with the greatest confidence in pregnancy to the mechanical factors, as venous dilatation, œdema of the lower limbs and the genitals, hæmorrhoids, retention and irritable bladder, are frequently seen also in gouty males and non-pregnant females.

The condition of the maternal blood in gestation is in keeping with the physiological relation which exists between the mother and the development of the fœtus. The cell changes of the composite animal are increased proportionately with the growth of the fœtus and the containing uterus. The fœtal organs, with the exception of the heart and liver, are practically inert, and the double duty is imposed on the corresponding maternal organs. The medium through which these additional functions are performed is the maternal blood, and consequently the quantity of the nutritive and the excretory substances conveyed by that fluid is necessarily increased and, owing to the greater constructive and metabolic energy exerted during the process of development, increased most probably in more than in the ratio of the dimensions of the utero-fœtal mass to the mother. The chief nutritive and excretory matters circulating in the blood are nitrogenous and inorganic, and consequently are most conducive to the development of lithæmia, as well as of puerperal septicæmia, eclampsia, peritonitis and thrombosis. The alkalinity of the blood which is so essential to the solution of the lithic acid compounds is diminished. Owing to the reduction of the number of the red corpuscles, together with the constant absorption of the nutritive materials by the exacting fœtus, hydræmia frequently exists. The consequent tenuity should be additionally favorable to the deposition of the uric acid and the urates. The increased quantity of fibrine which has been observed during gestation may afford a clue to some cases of cardiac disease, as well as to the not unusual occurrence of embolism and thrombosis. It may be permissible to speculate upon the possibility of those conditions, which the fœtal fluids would naturally share with the maternal blood, affording a clue to the etiology of some of those obscure cases of intra-uterine deformities and disease, as well as of congenital cardiac lesions and adherent placenta, depending upon plastic and inflammatory changes of the serous and enveloping membranes of the fœtus.

In the vascular system the most constant results of pregnancy are the increase of the arterial tension and of the cardiac action. The cause of these conditions in the earlier months of gestation is rather obscure, but as pregnancy advances it becomes very obvious. The increased quantity of fluid which the heart must propel, the augmented functional activity of the kidneys and the other maternal organs, the additional resistance which is offered by the utero-placental circulation, which may be largely due to the osmotic process in the placental circulation during the interchange of the maternal with the fœtal blood, all contribute to throw more labor upon the heart. This organ is stimulated to greater rapidity of action in the entire 24 hours by the profuse cell

changes in the nutritive and excretory organs of the two systems and by the elevation of temperature in the uterine circulation. I may mention incidentally that the abeyance of the phenomenon of the decrease of the beats on the assumption of the sitting or the recumbent posture has been recently proposed as of diagnostic value in cases of obscure pregnancy, which I have verified as early as the second month. The result of the additional strain is conservative hypertrophy of the heart. The form of hypertrophy is a matter of speculation, and whether it is simple or eccentric is a question of interest both to the physiologist and to the physician. Another natural result of this condition is the more forcible action of the heart and an increase of the violence with which the valves and the other mechanical structures perform their functions. This violence is liable to produce local inflammation at the points of areas of valvular impact or contact and at the sites of traction of the chordæ tendineæ. These localities are thus prepared for the deposition or the infiltration of the morbid elements of the blood, with consequent stenosis and valvular insufficiency. The resulting irregularity or roughness of the endocardium also affords a suitable surface for the deposition of the so-called "vegetations" to which the excess of fibrine is peculiarly favorable. These conditions may be independent, or associated with the results of the hypertrophy, which may be followed, like the uterus, by normal involution or the analogous conditions of subinvolution, or that which is rarer, superinvolution, thus producing simple or complicated cardiac hypertrophy or weakness with or without dilatation. Again, if the process of involution be rendered abnormal by the presence of lithiasis or some other disturbing influence, the result may be fatty, calcareous or other cardiac or vascular degeneration. To the last specially mentioned condition the discovery of lacunæ of calcareous matter in the organism of the pregnant female would indicate a special tendency. The heart suffers mechanically also during gestation by the encroachment of the gravid uterus on the thoracic cavity, as is evidenced by the palpitation which is sometimes produced when the pregnant female assumes the recumbent position, and which is rapidly relieved by change of posture.

The influence of gestation upon the respiration is not as distinct as upon the other functions, but although a certain compensatory change occurs in the shape of the thorax by its increased antero-posterior and transverse dimensions, it is obviously disturbed by the growth of the uterus, and the inspiratory and expiratory movements must be diminished. The most marked change in the expired air is due to the increased elimination of the carbonic acid, and probably of the water which is a natural consequence of the respiratory needs of the second organism. The most frequent disturbances of respiration are dyspnœa, hiccough and irritable cough. A particular interest is attached to the fact that physiologists have recently localized the centre which is supposed to preside over the formation of uric acid at a point close to the respiratory centre in the floor of the fourth ventricle. That this has any practical bearing upon our present investigation is not very evident, but when the principal difference between uric acid and urea is the lesser atomic combination of oxygen with the former, the relative position of the two centres may have some causal relation to the presence of the acid in pregnancy.

The phenomena presented by the chylopoëtic system in pregnancy are so numerous and important that we can only briefly indicate their relation to our subject. In the first instance we find that as gestation advances the pregnant woman generally consumes a greater quantity of food and of a more varied kind, a circumstance which is notorious for its association with the gouty diathesis. She also suffers from functional dyspepsia, cardialgia. eructation and vomiting. The success which so frequently follows the exhibition of anti-lithic remedies in such cases tends to indicate the nature of these disturbances. The intestines furnish us with additional links for our chain of evidence by the occurrence of diarrhœa, often of an irritative character, and of constipation symptoms which are frequent in lithiasis.

The hepatic disturbances are additionally interesting owing to the weight of evidence which has been adduced to convict the liver of being the chief offender in the production of the lithiasis. There is undoubtedly more than a causal relation between pregnancy and hepatic disturbance as is evidenced by the frequency of pigmentation and jaundice, acute yellow atrophy of the liver, a disease which is associated with gestation with significant frequency. This fatal disease, as well as some other hepatic lesions, is additionally interesting in our present speculation owing to its causal relation, which it shares with pronounced lithiasis or gout, to grave nervous depression, emotional disturbance and bad hygienic surroundings.

The mechanical influence which the gravid uterus exerts on the digestive organs is easily recognized with regard to the gastro-intestinal tract, but unless obstructive jaundice is produced in the later months of gestation by the traction of the biliary ducts consequent upon the upward displacement of the liver, it is difficult to recognize it as an important factor. It is hardly possible for the biliary ducts to be compressed in the carefully protected position which they occupy, first, in the transverse fissure of the liver, guarded by the lobulous quadratus and in front of the vena cava, then in the lesser omentum behind the duodenum, and lastly, between the heart pancreas and the second portion of the duodenum. It is more probable that this phenomenon is the result of direct pressure upon the liver, or some coincidental disturbance attributable to the dyscrasia or to an occult reflex nervous influence. So little is known of the spleen and its relativities that we cannot expect to establish a definite connection between it and the diseases of gestation, but in that rare disease, leucocythæmia, we find that a very large proportion of the cases occurring in females are associated with pregnancy.

The influence of gestation upon the urinary organs is very marked owing to their anatomical association as well as to the important duties which they perform as the chief emunctories of the system. The quan-

tity of urine is notably increased and the total amount of the excreted solids is greater than in the non-pregnant state. The changes which take place in the kidneys vary from slight and transient hyperæmia to the acute and chronic parenchymatous nephrites of pregnancy. Almost all the pathological changes to which the kidneys are liable are associated with gestation, but those which are most frequently present are such as are usually found in lithiasis. It has not been demonstrated that renal hypertrophy accompanies normal gestation, but from analogy with the conservative changes which take place in the abiding organ when one kidney has been extirpated, or destroyed by disease, we would expect to find compensatory enlargement owing to the greatly increased functional labor of these organs. We are familiar with the idea that renal disease is easily induced in those individuals upon whom nature has bestowed organs which are barely adequate to their ordinary necessities. When any unusual strain is put upon them by exposure, disease, rapid increase of weight, or overwork, the mediocre organs fail, and we have another example of the close relation which exists between weakness and irritability or disease. That such a strain is considerable in pregnancy is very obvious, arterial tension is increased, the amount of solids and fluid passing through the organs is greater, of the total vital force they experience a diminished influence and the disastrous results are only too frequent. It is very probable that the so-called puerperal diseases of the kidneys originate during gestation, and that the evil effects have only culminated when the additional strain of parturition is imposed upon the diseased and incapable organs.

The theory of the mechanical influence of the gravid uterus by its pressure on the renal veins has been ably refuted by more than one observer, with whom, upon anatomical grounds, I entirely agree, but I consider it more than probable that the ureters are subjected to such interference in the lower portion of the abdominal cavity where they lie on the psoas muscles or in the cavity of the pelvis in close contact with the cervix uteri, and where every modification of position and dimension must produce mechanical effect. The results following the ligation of the ureters in the inferior animals, which produces grave structural changes in the kidneys and the copious accumulation of the urates and uric acid in the blood and the tissues generally, clearly indicate the consequences of any mechanical obstruction. This is most liable to occur in the later months of pregnancy or during parturition, and it may explain the appearance of eclampsia and other acute disorders, especially in difficult or tedious labors. The remarkable absence of the elevation of the general temperature during the greatly increased metabolic activity of pregnancy, and notwithstanding the fact that the uterine temperature is higher than that of the system, may have some connection with the great depression of vital heat observed after ligation of the ureter.

The nervous system is peculiarly prone to abnormal manifestations during pregnancy. The influence of this system over all other organs of the body and their reciprocal effects are too well known to require more than a cursory notice. Morbid conditions of the blood exercise a marked effect upon the nervous phenomena owing to the consequent mal-nutrition of the delicate nervous structures, and this may account for the frequency of nervous perturbation during gestation. These nervous lesions which appear to have an etiological relation to this condition have already been mentioned in connection with lithiasis, but it is difficult to determine the proportion of causality to be attributed to the one and the other of those indissolubly associated or reciprocal factors. The frequency of insomnia is interesting and may constitute a clue to the investigation of the purely nervous group of symptoms. In the vomiting of pregnancy the closest investigation frequently fails to discover any cause other than a nervous influence, the nature and relations of which I have already discussed at some length in a paper entitled, "Causality in Disease," which appeared in the *Boston Medical Journal*, of April 15, 1886.

I shall briefly refer to the conditions of the muscular and skeletal structures which we witness in pregnancy. That condition which is termed mollities ossium, which is closely associated with child-bearing, is peculiarly interesting as evidencing the powerful influence of the nutritive demands made by the fœtus on the maternal system. In this disease the inorganic elements being supplied in deficient quantity by the digestive system of the mother, are absorbed from her bones and carried by the blood to the placental circulation. The presence of rheumatoid and other arthritic lesions are notably frequent during the child-bearing period and their occurrence after gestation is often observed. The relation between these diseases and lithiasis is generally recognized and affords additional testimony in favor of the nexus which I am endeavoring to demonstrate. The frequency of muscular rheumatism and spasm, or cramp, is also notable, and their association with lithiasis is well established.

As in the *résumé* of lithiasis I wish to recall the persistent effects upon the system caused by the occurrence of a single pregnancy which manifesting themselves by various lesions not to be ascribed to any other other influence and indicating the permanent adoption by the constitution of a morbid action which must be regarded as being closely related to lithiasis. In endeavoring to establish a parallel if not an identity between the constitutional tendency produced by lithiasis and pregnancy, I have indicated that both originate in a grave disturbance of nutrition, they present a similar modification of the blood; the pathological changes bear a close resemblance; the prominent functional disturbances are broadly identical; the numerous sequelæ are similar; and lastly, after one or more visitations the constitution is prone to adopt the induced condition as a diathesis.

ECLAMPSIA.

Read before the Section of Obstetrics and Gynecology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

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Therapeutics, like dress, has its fashion, and often the treatment of disease as well as the pathology will change with the times. Nothing illustrates this better than the theories of its nature, and the treatment of eclampsia.

During the first half of the nineteenth century, puerperal convulsions were treated almost exclusively by free depletion, and all the works on midwifery declared that that was the principal remedy, far superior to all others; but after awhile, in consequence of the do nothing system of Hahnemann, and the moral precept against the shedding of blood, which began to prevail amongst the people, the doctors laid aside their lancets—which they had always carried—and forgot their skill, so that as the late Professor Gross declared, "bleeding became one of the lost arts."

This is particularly unfortunate in the treatment of convulsions in childbirth, which usually yielded sooner to depletion, than by any modern improvement. Although some cases do recover without blood-letting, if they are well selected and properly understood, yet even they will bear some depletion; for in the formation of a new being, a large amount of blood is required for this work, and the mother will often lose a great quantity in childbirth, and recover rapidly afterwards.

The subject of eclampsia has been written upon so often, that it has become a very trite theme, one on which very little new can be said, yet a *résumé* of its pathology and treatment may not be objectionable at this time, when the medical pendulum is oscillating from one extreme to the other, and the treatment varies with the age in which we live.

Eclampsia, which may occur to parturient women during the later months of gestation, or when in labor, is so named from the Greek $\varepsilon\kappa\,\lambda\alpha\mu\beta\omega$, to flash out, because of the suddenness of its occurrence.

It is very rare, if it occurs at all, amongst the Indian Tribes, for Dr. Engleman does not mention it in his "Labor among Primitive Peoples," so that it must be regarded as one of the results of civilization, and a violation of nature's laws, during gestation, and in fact, from puberty when young women are put in tight-fitting dresses and corsets, which prevent a full development of the abdominal and pelvic organs; and also as Dr. Goodell has shown in his address on "The Dangers and Duty of the Hour," that faulty system of female education when the excessive brain work of young women often injures and prevents physical and sexual development. Then when gestation and labor occurs the over-acting brain becomes engorged with blood, and if not relieved by suitable remedies eclampsia may occur.

Puerperal convulsions are either *sthenic* or *asthenic*. Hippocrates considered them "to take place from repletion or depletion;" they are therefore caused by plethora or anæmia, for an overflow of blood may produce convulsions, as in apoplexy; or an exsanguineous condition of the blood-vessels may cause them when persons or animals are bled to death, so that the same condition may arise from opposite means; hence, the treatment must be governed accordingly.

It is a curious fact, says Ramsbotham, that the two perfectly opposite states, viz., too great a fullness of the vessels, and too great emptiness, will produce in this respect exactly the same phenomena, and I look upon a case of puerperal convulsions to be in fact, one of apoplexy, only that we have superadded to the common apoplectic phenomena violent spasmodic contractions; and this symptom is dependent upon the irritable and excitable state of the nervous system, always in a greater or less degree accompanying pregnancy and parturition.

As these convulsions arise from two distinct, and opposite conditions of the system, one in which excessive distention of the blood-vessels of the brain or spinal cord, or both produce eclampsia by compression; the other, in which from excessive loss of blood, from hæmorrhage, natural or artificial, the nerve centres are drained of their blood, giving rise to convulsions from anæmia, as first pointed out by Marshall Hall. In the one case bleeding is remedial by relieving the oppressed nerve centres and restoring the balance of the circulation; while in the other it only increases the evil. Another most important and frequent cause is in the constitution of the blood, which becomes changed from its normal condition during utero-gestation, by the mechanical pressure of the gravid uterus or the intestines, the renal vessels, nerves and kidneys; and the upward pressure against the diaphragm prevents its free action, and the perfect oxygenation of the blood, which then becomes a morbid stimulant to the nervous system in consequence of the albumen in the urine, and the retention of urea and other salts in the blood.

The frequency of convulsions in primipara is owing to the fact, that the pressure is greater against the kidneys and renal vessels, in consequence of the rigidity of the abdominal walls; whilst in subsequent pregnancies the muscles are more relaxed, and consequently the congestion of the kidneys is not so great—for that is the chief cause of albuminuria in eclampsia; for this condition of the urine always exists in puerperal convulsions, as has been proved by Drs. Lever, Simpson, and subsequent writers on the subject.

Professor Braun, of Vienna, referring to the coincidence of eclampsia and albuminuria, says, "that this has opened a new path to the knowledge of this most dangerous disease, so that the eclamptic convulsions of women during pregnancy, must be considered to be identical with the fits of adults, in general, that are produced by uræmia in the course of Bright's disease.

Frerichs conjectured that eclampsia was caused by the changing of the urea into carbonate of ammonia in the blood, and that this was the cause of

[1] Deceased.

the death of the fœtus; but of this he gave no proof, and Dr. Hammond, by experiment, has disproved this theory.

At a recent meeting of the Société de Biologie, MM. Doleris and Butte communicated the results of some chemical and experimental observations on five patients with eclampsia, and found in the blood a crystaline substance, which was toxic to rats and sparrows in almost infinitesimal doses; and that the proportion of urea in the blood was not excessive, its amount being too slight to attribute to it the cause of eclampsia.

From all the information we have on the subject, we must necessarily come to the conclusion that the cause of puerperal convulsions is undecided, and it is yet *sub judice.*

Dr. T. G. Thomas says, that eclampsia differs from epilepsy; for the latter generally has an "aura" or warning like a cold vapor or sensation which arises from some part of the body, and proceeds to the head, when unconsciousness occurs, and the subject falls in a fit — being affected with clonic spasms, or alternate action of the flexor and extensor muscles; whilst in eclampsia there is a rigidity of the limbs, which are extended and bent backwards as in opisthotonos. Epilepsy also occurs in both sexes. He considers eclampsia to be caused by a nephritis which he calls puerperal, as it arises only during utero-gestation; leaving the blood surcharged with some noxious elements which the crippled kidneys cannot eliminate; whilst we know not how this nephritis is produced, yet when gestation ceases to progress the renal trouble soon disappears. The eccentric form of eclampsia may be caused by some reflex action arising from some irritation of the uterus or its appendages, the bladder, kidneys, stomach or bowels, for when these viscera are relieved the convulsions will often cease.

They may also be caused by some atmospheric influence, and some writers say that they are more frequent when there is "thunder in the air," for then it is more highly charged with electricity. An instance of this kind occurred in my own practice, when an attack of eclampsia was ushered in by a vivid flash of lighting, and a loud clap of thunder preceding a storm.

The premonitory symptoms are headache, giddiness, drowsiness and a feeling of intoxication, with a staggering gait, a ringing in the ears, a dimness of vision, and even a total loss of sight, a numbness of the arms and legs, with difficulty of articulation.

Stout, fat, able-bodied women with short neck, swollen limbs and bloated faces are particularly liable to these convulsions; and if there is diplopia with flashes of light, a sudden loss of hearing with a feeling like a sudden blow on the head or a severe sudden pain in the stomach, the attack is imminent. Then unconsciousness occurs, the face becomes red or purplish, the conjunctivæ are injected, and the pupils fixed, a violent jerking of the muscles of the upper and lower extremities takes place with a rotation of the head to one side, more often to the left, has been my observation. There is also a horrid distortion of the face, with rapid breathing, causing at times a loud hissing sound. The tongue is often thrust between the teeth and severely bitten, so that the bloody froth and saliva, which issued from the mouth of the patient when writhing in these contortions, presents a horrible scene to the attendants and friends.

After a short time the fit passes off, and the woman may recover her consciousness slowly, but is not aware of what has occurred, yet complains of her head, and soon the convulsions may return with a repetition of the same condition; or she may remain comatose, with dull heavy stertorous breathing during their intermission. The uterine contractions will continue, and the child may be expelled from the womb without her consciousness returning, or even the attendants being aware of it, until it is seen or felt between her thighs; it however, is generally dead.

If the coma continues the danger of a fatal termination to the case is greater than when there are intervals of consciousness between the fits.

As to the treatment it depends on the character of the convulsions, and the views the obstetrician may entertain of their pathology. But in the hyperæmic cases when the pulse is full and hard, the most rational plan is to bleed promptly and freely at the beginning of the attack, so as to make a decided impression on the circulation, which alone can indicate the amount to be taken, and therefore the pulse should be watched. As the majority of cases of eclampsia are in primipara, the rule is to bleed, for as Dr. Goodell says, "an early, timely and full bleeding invariably relieves intra-cranial pressure, whether caused by an effusion of blood or serum," and Dr. Packard related a case to the Obstetrical Society of Philadelphia, of convulsions and death from apoplexy in labor, which was not bled, and the autopsy showed the meninges of the brain to be deeply congested, and all the tissues of the brain exceedingly vascular. In the majority of cases of eclampsia the symptoms so strongly resemble those of apoplexy that venesection, either general or local, is not only advised, but absolutely required, even if other remedies are used.

After depletion an enema of castor oil and turpentine will be useful, and if the stomach is loaded with food an emetic will be necessary; whilst cold should be applied to the head and neck, and the extremities kept warm. When the fit is on we should prevent the patient from injuring herself, by restraining her from falling from the bed, or from striking her head or arms against any hard substance; by placing something between her jaws we prevent her biting the tongue, which is often seriously injured by getting between the teeth. Slapping the face with a wet towel will sometimes excite inspiration, and arrest the convulsion.

A vaginal examination should be made, and if the head has descended within the pelvic canal, deliver as quickly as possible with the hands or forceps; but if the paroxysm has subsided, trust to the uterine action to effect delivery, unless the presentation is abnormal. After bleeding, inhalations of ether or chloroform are useful—an injection per rectum of

chloral hydrate, or a hypodermic injection of morphia.

These remedies each have their advocates, who rely on them wholly without venesection, but I believe that the *asthenic* cases *only* can be cured without depletion; for in such there is not that intense pain in the head, which causes the woman to scream out violently—no redness of the conjunctivæ, nor full, hard, throbbing pulse, but an anæmic condition of the system when bleeding may be omitted.

Such cases can be relieved by inhalations of ether or chloroform, with injections of chloral repeated from time to time when the convulsions return. As soon as the patient can swallow she should be given bromide of potash to allay nervous irritability. If labor begin, promote delivery by all proper means, but if the fits have ceased and the uterus is quiescent, let it alone and wait for its action, which may not occur for several days, or even weeks after. We should, however, improve the condition of the blood by the use of iron and tonics, with diuretics to act on the kidneys, of which nothing is better than Basham's mixture.

Some cases which have occurred in my practice will be related.

A young married woman of plethoric habit, had been affected with headache during the latter part of her first pregnancy, which was relieved somewhat by a purgative, and the application of cups to the back of the neck; was suddenly seized with a convulsion at midnight, when a neighboring physician was called on the emergency. On my arrival I found her unconscious, with a full, hard pulse, and stertorous breathing. She was bled freely, about two pints being taken, which relieved her breathing, and reduced her pulse, which became quite soft and compressible. This arrested the convulsions, only occurring during the depletion; she however remained unconscious. An injection of spirits of turpentine ℥ss with warm molasses and water was given every two hours, until she had a copious evacuation from the bowels, and cold was constantly applied to the head. On vaginal examination there was no sign of labor, and as there were no more convulsions and she was breathing easier, we allowed her to rest. On the next morning the os began to dilate, and in a few hours it was fully expanded, but as the expulsive pains were feeble and ineffectual, I applied the forceps and delivered her of a dead babe. An anodyne of morphia, valerian and camphor was given to produce sleep; but she did not recover her consciousness until the following day, being unaware of what had occurred during the previous forty-eight hours, her diminished abdomen alone revealing to her the birth of her child. From this time she recovered perfectly, and although she has had several children since, yet has had no more attacks of eclampsia.

J. K., after an easy labor, gave birth to a child at 5 P.M., the placenta coming away without any assistance, but the hæmorrhage was very slight. At 8 P.M. she complained of pain at the epigastrium, with eructations, which were relieved with sulph. morph. in aq. camph. She slept some but at 2 A.M. she suddenly gave a sharp scream and had a fit of eclampsia, which was followed by others. Being summoned, I bled her copiously and had cups applied to the back of the neck; injections of castor oil and turpentine were given, croton oil applied to the tongue; inhalations of ether were also used and ice placed on the head; but all proved ineffectual, for neither Dr. Drysdale (who was consulted) nor I could do anything to prevent her death, which occurred just 24 hours after the birth of her babe.

A post-mortem examination was refused, but we believed that a rupture of a cerebral vessel must have taken place, for she was unconscious from the first fit.

I was called by a physician to see a woman who had a convulsion whilst in labor. As the head of the child was pressing on the perineum I assisted the delivery with my hands, which was soon followed by the expulsion of the placenta, and several clots of blood. Another convulsion occurred, but by applying cloths wrung out of hot water, to the vulva, a free discharge took place. Ice-water was put on the head. Her pulse was not full, yet she was unconscious, and had been so for several hours. She was cupped on the nucha and temples, and an injection of oil and turpentine given. On the next morning the doctor found his patient not only conscious, but in her right mind. Her recovery was perfect in a few days.

E. B. had an attack of eclampsia at 2 A.M.; was bled copiously, also cupped on the temples and behind the ears; became conscious and slept until daylight. Labor began at 9 A.M, and a dead babe was born at 10:30 A.M. No more fits, was soon well.

S. H., aged 35 years, pregnant with her fourth child, was very fat and full-blooded, complained of headache and a "peculiar sensation extending from spinal column to the back of the head." Three pints of blood were taken from the arms, and a sinapism placed along the spine. Labor began, but the os dilated very slowly, and when the expulsive pains set in she again had headache, and whilst the child's head was passing through the inferior strait she was seized with eclampsia. The bandage was loosened and the vein reopened at the arm. Another fit occurred as the head was coming through the soft parts, but it ceased when the dead child was born. She remained unconscious for about an hour and then inquired for her babe, but was not told of its death. This apparent improvement was of short duration, for more convulsions followed, when a cupper was sent for, and the assistance of my friend, Dr. Stewart, who came promptly. Cups were applied to the nucha and down the spine. Inhalations of ether were used and her bowels were opened by injections of oil and turpentine; yet the fits continued. Twenty grains of bromide of potassium were given by the mouth—for at times she could swallow. Her pulse was 112, but compressible; the temperature 104°, the breathing labored. The urine drawn by a catheter was full of albumen.

Four hours later the pulse was 130, temperature 104½, breathing heavy, stupor increasing. A blister was put on the back of the neck; warm cloths were applied to the pubes to increase the lochial discharge,

which was scant; but all our efforts were useless, for the stupor and convulsions were soon followed by coma and death. No autopsy was permitted.

C. I., aged 24 years, being in the seventh month of utero-gestation, was œdematous over the whole body, and had severe headache, for which she took bromide of potash and diuretics, which relieved her considerably. On January 16 she was seized with convulsions and became unconscious about midnight, when a neighboring physician was called in, who attempted to bleed her, but was unsuccessful. The convulsions occurred every few minutes; she would turn her head to the left side and bite her tongue, so that bloody froth was issuing from her mouth. Her pulse was full and hard, her breathing stertorous, and her face congested at times. She had been in this condition about two hours when I arrived. A leecher had been sent for, who applied leeches to both temples and the nucha, from which the blood flowed freely. Cold water cloths were placed on the head and warmth to the feet. Ether was given by inhalation, which controlled the fits somewhat; but several hours elapsed before they ceased and she became conscious. During all this time the os uteri was firmly contracted, and showed no signs of labor.

She was affected with dimness of vision for several days after, but under the use of diuretics and bromide of potash the dropsical effusion gradually subsided from her limbs and body, and by the help of quinine, iron, and generous diet she soon recovered, and resumed her household duties. Labor, however, did not occur until February 8, when "the waters broke," and a putrid fœtus was expelled from the uterus without any trouble, which was soon followed by the placenta.

H. Y., a primipara, of nervous temperament, was suddenly seized with eclampsia at the beginning of her labor. Her pulse was compressible and her face pallid; the jerking of the limbs and the twitching of the muscles of the face, with the turning of the head to one side, occurred frequently. There was no stertorous breathing, but she was unconscious.

An injection of ʒj hydrate of chloral in ʒiv of water immediately arrested the convulsions and she became quiet. An examination per vaginam showed the os dilatable, and a face presentation, which was changed to an occiput anterior of the vertex; but during my manipulation she became restless, and I was obliged to repeat the chloral. Feeling the necessity of a speedy delivery, and as the os was well dilated, I applied the forceps and brought the child's head through the bony pelvis quite easily; the body was born naturally without any help, and the placenta soon followed, but the child was dead. The mother was still unconscious, but being put comfortably in bed, rested quietly. There was no return of the convulsions. She was not aware of what had occurred until 24 hours had elapsed, when, feeling sore, she inquired of the nurse what had happened whilst she was asleep. Her recovery was rapid. This was an asthenic case, and relieved without depletion.

On considering the symptoms of eclampsia, and the conditions of the patients, the majority of obstetricians have concluded that depletion, either general or local, is the best treatment, followed by purgatives and opiates, with inhalations of ether and injections of chloral; that speedy delivery will often stop the convulsions. Post-mortem examinations have revealed nothing positive as to the cause or pathology of eclampsia.

TREATMENT OF CHRONIC SUPPURATIVE OTITIS MEDIA.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY SETH S. BISHOP, M.D.,
OF CHICAGO.

The object of this paper is two-fold: *First*, to elicit a discussion of the subject which shall set forth the latest and best methods of treatment; *Second*, to protest against a mode of treatment that has been highly lauded of late. I refer to what is called the dry treatment, in which the external meatus is filled and even packed, with a powder that is to remain from one visit to another. Although the principle involved did not recommend the practice as being in accord with good surgical doctrine, the favorable results reported induced me to try it, as I have a habit of trying all new methods which promise any improvement on the old.

The plan proposed was to remove all the pus from the drum-head and meatus with dry absorbent cotton, inflate the middle ear, again remove what discharge was forced through the perforation of the membrana tympani by the inflation, and then blow powder into the middle ear, and fill the external meatus with the same. It was even urged that the powder should be put in, a little at a time, and each layer packed, one upon the other, until the meatus was full. It was claimed that in this way the discharge was speedily stopped; and it was—that is, the exit was stopped as is a bottle with a stopper, so that the contents could not escape. But suppose you want the contents of the bottle to escape, as you probably do, how is this to happen unless you tap it at the bottom, as one does in the nasal douche? This is just the condition presented by an ear tamponed in this so-called dry method. The discharge can hardly escape through the solid packing of powder which the absorption of moisture converts into a dense plug. The purulent discharge does not dissolve it even if a soluble powder is employed, and when iodoform or bismuth is used solution is clearly out of the question. What results? The formation of pus does not often cease at once. It fills the middle ear and finds exit through the Eustachian tube, if the tumefaction is not too great. When the tube is not patulous the damming up of the sewerage of the tympanum will naturally force the pus through the mastoid antrum into the cells, after the middle ear has filled. A very serious aggravation of all the symptoms is likely to follow.

That this method is contrary to a very important prin-

ciple of surgery must be patent to all. An abscess should not only be opened, but should be kept open until the pyogenic process ceases. It is a fallacious doctrine that air can or should be excluded from the middle ear in this manner. Air will gain access to this cavity through the Eustachian tube and furnish pathogenic germs. Free drainage should be maintained through the canal built by Nature, in order to avoid a complication of the existing trouble with mastoid disease. Moreover, it is problematical whether one ever thoroughly cleanses the middle ear of pus by this dry method, even if the perforation be an unusually large one. The cotton is not likely to enter the tympanic cavity and it is not desirable to have it for there would be danger of entangling the ossicles in its meshes and dislocating or removing them.

The most rational and successful treatment I have tried is the following: Cleansing the external meatus and middle ear thoroughly with injections of a 1-10,000 solution of mercuric bichloride; inflation by the Politzer method, or catheterization; iodine vapor if stimulation is required; drying the part with absorbent cotton and dusting them with finely pulverized boracic acid containing ½ of 1 per cent. of mercuric bichloride, or if this should cause any unpleasant sensation, iodoform or boracic acid may be substituted.

Hydrogen peroxide is valuable for cleansing the ear when there is a large amount of debris present in the form of pus mixed with epithelial scales, or cheesy concretions. In addition to its excellent mechanical effect due to effervescence, the oxygen liberated destroys bacteria. The latter result is also effected by the sublimate solution which in one-half the strength mentioned will destroy bacteria in ten minutes. The inflation ought to expel the fluid contents of the middle ear. In cases of brief duration iodine is not required, but in very old cases, when the vital forces seem to have lost their powers of recuperation and resistance to pathogenic germs, tissue changes—the process of absorption and nutrition—may be favorably influenced by the judicious use of iodine vapor. Drying the parts before dusting them with the powder leaves the patient more comfortable than the chilling effect of evaporation does. The powder when slightly wet becomes hard and produces a feeling of stiffness, and sometimes of soreness. Then if the powder be left dry we are enabled to determine at once when the discharge ceases.

It is not necessary to fill the ear with powder. If enough be insufflated to barely cover the suppurating membrane, all is accomplished that can be expected from the remedy, and the functions of the ear are not materially interfered with—an important consideration with many patients. This treatment leaves no obstruction to free drainage, and in no manner invites mastoid trouble. When the disease has just passed from the acute to the chronic stage the boracic acid powder had better be used without the bichloride, for the latter may cause some disagreeable crackling sensations and even pain. But in the strength mentioned it is not likely to do so unless there is considerable inflammation.

At the meeting of the Illinois State Medical Society, held in this city three weeks ago, the efficacy of iodoform as an antiseptic was called in question. While the experiments of Heyn and Rovsing, of Copenhagen, show that iodoform is inert in the presence of bacteria while the remedy remains in a dry state, de Ruyter has proved that iodoform in the presence of the fluids of suppurating surfaces undergoes chemical decomposition during which new iodine compounds are formed. The splitting up of the iodoform, its partial solution and absorption, resulted in the destruction of the ptomaines, the product of pathogenic micro-organisms, and hence the arrest of pathological metamorphosis. The laboratory thus confirms the practical conclusions which years of experience have forced upon the profession. In conclusion, let me add in support of the method here outlined, that no routine treatment has ever yielded the uniformly satisfactory results in my hands that this has. Were there time to enter into more minute details it would be interesting to consider the variations of treatment required by necrosis, etc., but that would extend beyond the scope of this paper. Numerous illustrative cases might be adduced from my records, but I will mention but one that I have now under observation, in which the hearing was nil from chronic non-suppurative inflammation of the left middle ear, and the voice could be heard only by shouting in the right ear, in which chronic suppurative inflammation had existed for over forty-nine years. I removed from both nostrils large polypi, which had prevented nasal respiration for twelve years. The treatment I have described stopped the discharge in four days, and subsequent catheterization, etc., restored some hearing in the left ear, and so improved the right as to render conversation audible at a distance of fifteen inches.

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RESECTION OF THE INTESTINE FOR FÆCAL FISTULA.

Read before the Chicago Medical Society, October 3, 1887.

BY F. HENROTIN, M.D.,
OF CHICAGO, ILL.

About five weeks ago I was called to Pullman, in this State, to see a patient. On my arrival I found the patient affected with fæcal fistula. The history of the case was this: The woman had been affected with an obstruction of the bowels about fifteen days before I saw her. The obstruction was evidently in the left inguinal region, as a mass was found there, which the physician in charge tried to reduce. Failing in reducing it, she called in consultation a physician from Chicago, who went out there, and by dint of manipulation they succeeded in reducing this hernia. Immediately succeeding the reduction of the mass in the groin, the patient complained of a great deal of pain, and a truss was fitted over the place where the hernia had existed. This truss being somewhat tight gave rise to a great deal of pain, and after two or three attempts at periodical times to wear the truss it was laid aside. The parts

by this time were considerably swollen and required attention. In four or five days an abscess over the part had formed. The pus was evacuated, and within forty-eight hours there was seen a liquid substance oozing from the wound, and this developed into a well marked fæcal fistula. (I should say that this was a femoral hernia on the left side.) The fistulous opening was, at the time I saw the patient, very large and at the outer part would easily admit the thumb. On examination I found the woman very much emaciated, thin and extremely weak. She had then had this fistulous opening running about eight days; the parts around the opening were excoriated and the edges of the wound were in a gangrenous condition. The discharge from it was excessive, and consisted of a greenish fluid exuding in large quantities, and mixed with this was a yellowish emulsive substance, having a slight fæcal odor.

The weakness of the patient and her general condition, as well as the appearance of the wound, made me decide upon an operation. Having given the matter careful consideration I operated the second day following. There was no opportunity to do the operation under antiseptic precautions. The surroundings were not the best for such an operation, but as far as it lay in my power antiseptic precautions were thoroughly carried out. The instruments were all very carefully gone over beforehand, and the sponges and all material used was thoroughly and carefully prepared. I decided upon simply making an incision in the linea alba of the lower abdomen, and taking out and detaching the bowel.

I made an incision about three and one-half inches in length so as to get sufficient room, and entering the abdomen I slipped a large sponge into the opening, so that the end was immediately beneath the attachment of the bowel at the opening; I also packed in two or three little sponges at the side of this long sponge, in order to protect the parts as much as possible. The large sponge reached from a little below the fistulous opening to the opening in the abdomen, so as to cover the parts thoroughly. I then detached the ring of the intestine by slipping a finger around it and gradually working it apart, and so was able to grasp the intestine and bring it to the surface. To make sure that the intestine did not slip, I had introduced a female catheter through the external opening four or five inches into the bowel, so as to be perfectly certain of bringing the parts to the opening without delay. Everything worked very satisfactorily, and the bowel was brought to the surface, and outside upon the abdomen in a very few moments. The only part in which there was any difficulty was in detaching the bowel from the opening. Never having tried the procedure before, I was surprised at the amount of force necessary to detach it. When I brought the bowel to the surface I packed sponges around it, and held the edges of the wound together in such a way that I knew that there was no possibility of further infection during the fixing up of the bowel. Much to my chagrin, when I had brought the bowel to the surface, I found there was a very large and jagged opening in the bowel, and that the efforts at detachment had served it almost down to the mesentery.

There apparently remained nothing to do but to take away the part, resect the intestine entirely, which I immediately did. Taking the bowel up carefully (with these prepuce forceps) on each side, about three-fourths of an inch beyond the furthest point of the tear, I cut the bowel off square on the side of the tear, leaving one-fourth of an inch margin. These forceps answered the purpose admirably, each blade being covered with a soft rubber so as to leave no impression on the bowel. I took them off once or twice during the process of stitching, and found there was not too much pressure being used, not enough to wound or injure the bowel. Having cut off the bowel down to the mesentery I thought it best not to injure the mesentery, which proved, I think, a great element in the success of the case, and which has been further proved to my own satisfaction to be the proper way of procedure. When I reached the mesentery I simply cut right straight across along the edge of the mesentery, and left it as nearly whole as I could, cutting directly in a line between the bowel and mesentery. I then stitched up the intestine. After stitching up the bowel and fixing up the mesentery to my satisfaction, I returned the bowel to the abdominal cavity, and looked for any debris or blood, but not finding any stitched up the abdominal wall tightly. I had the long narrow sponge left from one opening to the other, and apparently not a drop of oozing had taken place in the abdomen. I replaced this long sponge with a flatter one before stitching the abdomen, so as to protect it from any bleeding stitch holes, and in a short time had the wound closed, and had the satisfaction of knowing that there was no blood in the abdominal cavity.

As regards the original opening, I simply scraped it off under Poupart's ligament, refreshed it, and introduced through that opening my drainage tube, closing the central wound entirely. I also introduced a second tube into a sinus that went up along Poupart's ligament, along the inguinal canal.

The case did remarkably well. At no time was there any temperature beyond a few fractions of a degree above 100. She never even vomited. There was no tympanitis, no bad symptom whatever. The patient is now, after several weeks, doing quite well. She was 59 years old and extremely delicate, but she is apparently very nearly in her normal health except that she has some colicky pains and occasionally a loose stool; whether this is due to a stricture and may prove permanent in character, I cannot say.

The after treatment needs no consideration. The dressing put on was merely the ordinary dressing of laparotomy after an ovariotomy—dry iodoform, an antiseptic cotton pad and antiseptic gauze outside. The dressings were only disturbed once every four or five days. There was a little abscess in the abdominal wall, but it gave no trouble and healed in a few days.

The particular point I wish to bring to your attention is the propriety of operation. The first item

of importance, which was very evident, was the extreme debility of the patient. She was naturally a very weak woman, was 59 years of age; and whatever was to be done had evidently to be done soon. Physicians who had seen the case and who assisted me at the operation, were also of that opinion, and they were possibly better able to judge than I was as they had watched the case from the first. The patient was evidently failing, the pulse and general appearance indicated a great deal of weakness, and in addition was this constant drain. I cannot tell the amount because I did not see the patient long enough, but it was considerable; the cloths and cotton padding, and dressings that were put on had to be changed several times a day, and when the abdomen was pressed above the wound this greenish fluid bubbled up in large quantities, mixed with a yellowish substance which I considered to be chyme, or rather chyle. What else was to be done? Of course we know that in a fistulous opening of that kind it is an ordinary thing to make a plastic operation of some kind, but in this woman such an operation would have failed on account of the amount of fluid and the character of the opening, its edges being gangrenous, a pulpy greenish-yellow. The only way in which that patient could have been kept alive would have been to have given her food by the mouth, and tried to find the lower opening, injecting food in that portion of the bowel, and it would have been very hard to tell which was the lower opening. The anatomy of the abdominal organs is such that we cannot always tell whether we are going up or down, under such circumstances. But this case had to be taken care of, and something done at once. The character of the fluid denoted that the opening was extremely high up; there was no dark substance, nothing that would represent fæcal matter, no appearance to indicate that it was low down, and the constant drain and the amount of fluid indicated that it was high up, because we know the villi of the intestines and lacteals take up the fluid as it goes along, and the lower down we get into the bowel the more the fluid disappears. For these various reasons it seemed to me that the one thing to do was an immediate operation; that in view of the weakness of the patient, the character of the fluid and the evident high situation of the fistula, any other procedure would be followed by failure.

The reason of the resection of the bowel is evident to you all, on viewing the specimen. It certainly would not be very good policy to try and patch up a bowel torn up in that way. As regards the way in which the operation and the stitching of the bowel was done and the way in which the mesentery was treated: In taking the bowel out I found that the serous coat was extremely soft and pulpy, and I soon found, on trying to put a stitch through, that the least little pull would tear through the serous coat, and I really believe that a large portion of cases of resection of the bowel, where the stitches are taken as much as possible in the serous membrane, are very liable to fail on that account. The way I stitched up the bowel was this: I put one row of stitches made of silk in the whole thickness of the bowel, the three coats. I started in on the edge on one side and then came out so as to bring my free ends on the inside of the bowel. I then tied. This was a very easy matter when the two portions of the bowel were held up by the forceps, and after thorough cleansing the two parallel edges were sewed together, each stitch being put so that it would fall inside when the bowel was brought around. The stitches were placed a little over a sixth of an inch apart, and I had no difficulty in going around the bowel in that way, always going through each of the three coats. When I got down to the last two stitches I began on the outside and brought the needle through what was left of the ununited inside of the bowel, then started another needle through the same way and brought them both out and tied. The last stitch I put in the same way, bringing out the needles from each side through a little crevice and tied as close as I could, and then it was easy to take the knot and insinuate it between the edges of the last two stitches, so that it was tied on the inside. I then put in a suture of continuous catgut stitched on the outside serous coat only. After each stitch I had my assistant draw the catgut snug to hold the ground I had gone over, and so managed to surround the whole bowel without difficulty.

As regards the mesentery, I did not interfere with it, but treated it in this way. Here we have a section, this being the bowel above and this the mesentery below. When I got down to this I stitched my mesentery in this way, not going through to this side so as to interfere with the circulation in this direction, and to make a V and hold it together in this way. You can see the absolute security which it gives. All authorities agree that interference with the mesentery is what produces the liability to sloughs, and they are extremely careful to tell us to interfere with the mesentery the least we can. Another good reason for this treatment is that when the parts are brought together and the mesentery is not held its movements produce a strain on these two or three lower stitches and cause them to cut through, and at the same time allow fluids to pass out and produce fatal results. So I stitched the mesentery in order not to destroy any of it, and at the same time hold it together so as to make the parts perfectly firm as a support to the bowel.

Another item that may or may not prove of importance was this: In cutting the bowel down on each side, having my clamp on, just before reaching the mesentery I curved my section slightly toward the side of the wound on both sides. It seems to me this is of value, as this is apt to be a weak spot. There being an accumulated amount of tissue here you can with this thickness of tissue take in a stitch on either side and hold them firmly so as to prevent as far as possible any strain at that place. The larger the amount of tissue the firmer the union will be.

One great factor toward the favorable issue of the case was that the woman hardly stirred, and did not vomit throughout the whole operation, and that the bowels at the time were almost absolutely flat. That has a great deal to do with the success of such cases.

It is a question whether in a certain proportion of

cases of hernia of a certain variety it would not be better to operate in this way. About a week ago I was called to see a patient in Lake View who was vomiting and had evident obstruction of the bowels. On examining the patient I found a bunch of something peculiar in the groin in the inguinal canal on the right side. It was evidently something coming from the inside of the abdomen, but I could not make out what it was. It did not have the appearance of bowel and I was loth to manipulate it very much. Yet the anatomical relations were such that it evidently came from there. I tried in every way to reduce it, but without success. I was so certain that it was not the bowel but was omentum that I allowed 48 hours to go by in order to watch the symptoms. At the end of 48 hours, and after various attempts at reduction, on Thursday I cut down on it and found, coming out of a very small opening, a piece of strangulated omentum. The condition of the patient was such that it was with great difficulty that we could stay in the room and operate on account of the stench from his vomiting. He lived a great distance from my home, and possibly I did not operate early enough. During the night the patient had a free stool, the first he had had for a week, the stercoraceous vomiting stopped, and for 48 hours he did well. The patient is alive yet and has a fair show, but the vomiting has recommenced and he does not look very well.

Now, how much of the omentum is injured? I cut off the omentum as close as I could; pulled it out as far as I could before it was cut and tied it at the internal ring, and after tying it carefully with catgut I cut it off and put back the stump. How much of that omentum is gangrenous behind that ligation? Of course the condition of the patient may be due to something else. I introduced the finger right into the abdominal cavity, and there is no greater danger in making the incision in the middle line and stretching the opening from the inside carefully with the finger and pulling out the omentum to see what you are doing. Our President told me that he once tied and cut off an omentum in an umbilical hernia. The patient died and the post-mortem examination showed this omentum stretched and twisted around and strangulating the intestines, and of course the patient was not relieved by the operation. The two cases taken together suggest the propriety in some cases of hernia that have stood for a long time, that were originally acute cases and probably omental, but where, from the length of time the hernia had existed, there was reason to suppose that there was considerable injury to the bowel or omentum, as to whether it would not be the best thing in these cases to open the abdomen carefully in the middle line, because you can reach down in the groin and, after stretching the internal and if necessary the external ring, bring out the strangulated parts and see plainly what is necessary to do.

On examination of the specimen before you one thing is plainly discernible: I was not mistaken as to the locality of the injury. There are no certain ways of always knowing the exact portion of the bowel affected. The lower part of the duodenum does not differ particularly from the upper part of the jejunum, but we know that the higher up we are the greater is the amount of folds of rugæ so-called valvular conniventes that are around the bowel. When I operated on this bowel it was nothing but a mass of corrugated folds on its mucous aspect, and though this specimen has been more or less changed in appearance by being immersed in diluted alcohol, you can see all along on the inner side the rugæ that are still present, showing about the only way that I know of to distinguish the upper part of the small intestine. Of course the anatomical relations of the bowel differ in different persons. However, from its appearance and location, I suspect that this specimen is a portion of the jejunum.

ARTIFICIAL RIPENING OF CATARACTS.

Read before the Chicago Society of Ophthalmology and Otology.

BY BOERNE BETTMAN, M.D.,
OF CHICAGO.

This is a subject which has not received the recognition from fellow-colleagues that its importance deserves. Only a few articles and comments, scattered here and there, can be found relating to the relief of persons having non-mature cataracts. The third number, Vol. xl, of *Knapp's Archives*, contains a communication from the able pen of Prof. Förster, of Breslau, entitled "On the Maturity of Cataract." Förster calls attention to the annoyances patients are subjected to who are afflicted with cataracts of slow development. In many persons the process of degeneration extends over a period of months and years, leaving them in a helpless condition, and in many instances obliging them to forego the enjoyments of life and resign life-supporting and profitable positions.

So long as the cararact is not mature, an operation is contraindicated. So long as the cortical substance is still firmly adherent to the capsule, extraction of the lens cannot be performed with perfect safety to the patient, for, as Förster correctly states, the remaining layers of cortical substance will imbibe aqueous humor, swell, and give rise to iritis and other dangerous complications. In order to produce more rapid degeneration of the lens substance, he proposes trituration of the cortex. The procedure consists of gently rubbing the cornea with the blunt end of an instrument, usually a strabismus hook or iridectomy forceps. The pressure exerted upon the cornea is transmitted to the lens, loosening and splitting the still adherent and semi-opaque cortical lens fibres. These, in the course of days and weeks, become perfectly opaque. The object of the operation has been accomplished; the cataract is mature. I was very much impressed by Prof. Förster's article, and resolved to try his method whenever occasion permitted. I have used the expedient quite often, but have modified it to suit my individual tastes. Instead of rubbing the cornea, I bring the pressure to bear directly upon the lens, by pressing against the capsule with a spatula, usually employed

to replace prolapsed iris. I prefer this method to the one recommended by Förster for the following reason: Trituration of the lens always follows an iridectomy. After the escape of aqueous humor iris and lens move up against the cornea; the iris contracts and the pupillary field becomes small. When the blunt instrument now is rubbed against the cornea the pressure, unless limited to the small pupillary area, will not only break down the lens fibres, but will subject cornea and the delicate iris tissue to an unnecessary irritation. I therefore, as before mentioned, carefully pass the spatula into the anterior chamber, and if necessary behind the iris, and gently stroke and press the lens in any direction.

Great care must be observed not to exert too much pressure, otherwise a dislocation of the lens might ensue. The flat side of the instrument should always be held against the lens surface. If tilted so as to bring the edge to bear upon the capsule, it no doubt would rupture the latter. It is unnecessary to add that the strictest antiseptic precautions are religiously adhered to, and that the eye should be fixed in case the patient shows an unruly disposition. This, however, is rarely necessary, owing to the anæsthetic effects of cocaine. The distribution of opaque lens fibres and general breaking up of the cortex can readily be seen with the naked eye during the operation. The mother of pearl sectors split, break into pieces, and are forced from their former positions. In the course of a few days, yea, even after twelve hours, the entire appearance of the lens has changed. Its anterior surface has now a uniform mottled appearance. When illuminated it frequently resembles a bag entirely filled with a granular mass. In successful cases it becomes entirely opaque, cutting off the yellowish reflex from the nucleus.

This delicate manipulation has rendered me great service, and has rescued many of my patients from a condition which, to say the least, was unpleasant.

The results of trituration of the lens are usually very marked, and in some cases may be termed instantaneous. Vision equal to from $\frac{3}{200}$ to $\frac{4}{200}$, *i.e.*, counting fingers at from three to four feet, can be reduced to qualitative perception of light in twelve hours. In the majority of cases, in fact in every instance where the trituration has been thoroughly accomplished, the lens can be extracted in from three to six weeks after the preliminary operation. During the removal of the opaque lens, the cortical matter escapes as a semi fluid, flocculent mass. The pupillary field is easily cleared of cortical remnants, and the danger attributed to the lodgement of transparent particles of lens substance in the wound or on the iris, is entirely overcome.

A few examples may suffice as illustrations:

Case 1.—January, 1883. Mrs. S., æt. 60. Left eye, nuclear cataract. Mother-of-pearl sectors in cortex. Amber-colored nucleus. Slight reddish reflex from fundus. Counts fingers at five feet. Right eye, incipient cataract; fingers at ten feet.

June, 1883. Condition not materially changed. Sight in left eye has decreased; fingers at eight feet. Left eye vision perhaps a trifle less than in January. The patient being very anxious for an operation, I proposed preliminary iridectomy and trituration of cortex. She readily consented. Operated June 5. June 25 l. lens, to all appearances, perfectly mature. July 15. extracted the lens. Recovery rapid and uncomplicated. V. = $\frac{20}{30}$.

Case 2.—Sept., 1886. Mr. H., contractor, æt. 62. Immature cataract, both eyes. Unable to walk about, since two years, without attendant. Vision, both eyes; counts fingers at four feet. Nuclear cataract. Reflex from fundus dull red.

Oct., 1886. Iridectomy and trituration of cortex, right eye. Six days later cannot count fingers, only able to discern movements of hand. I extracted the lens three weeks after the first operation. The lens and cortex were easily removed. On the fourth day I found my patient out of bed playing cards. He left the hospital two days later with vision equal to $\frac{20}{20}$.

Case 3.—Under observation three years. Immature nuclear cataract, both eyes. After much persuasion he yielded to my frequent demands and permitted me to mature the right lens. Vision before operation, counts fingers at a distance of three feet. Twelve hours later nucleus no longer visible, covered by a layer of white opaque cortex. No iris shadow. Removal of lens and subsequent recovery, with good vision, after a lapse of three weeks.

The conclusions arrived at in this paper are as follows: The operation is a feasible one. It is easily executed. There is no danger accompanying it. Its results are always marked and rapid. The subsequent removal of the lens is made more facile, and danger from secondary complications after extractions are greatly lessened.

Central Music Hall.

MEDICAL PROGRESS.

Surgical Tuberculosis.—In regard to tuberculosis of bones and joints (see preceding numbers of The Journal) Volkmann goes on to say:

27. Wounds from operations on joints and bones often become tuberculous before perfect healing is accomplished; fistulas and drainage openings fill with fungous granulations, parts of the wound already healed re-open, and new tuberculous abscesses form. In such cases very energetic treatment is to be recommended; renewed scraping out, cauterization with the thermo-cautery, wide incisions, and particularly tamponning of the open, perfectly cleansed wound with antiseptic gauze (particularly iodoform and sublimate gauze). The last measure is probably the most effective, and in the most severe cases should not infrequently be put in practice immediately after the first operation. But I do not consider it advisable to carry the principle of open-treatment of wounds too far, since we often get primary union after these operations.

The main thing, however, is not to wait too long for the second operation in tuberculous recurrences, in order to prevent the disease gaining too much

ground, and to interfere immediately when a new relapse appears. It is often necessary to make as many as 4 or 6 operations, and more, at intervals of a few weeks, always narrowing and circumscribing the diseased area, in order to get a perfect and permanent cure.

28. It seems that the operation for joint, and particularly for bone tuberculosis, in consequence of the entrance of tuberculous virus into the opened blood-vessels, sometimes gives rise to the development of an acute miliary general tuberculosis (most frequently running its course with basilar meningitis).

29. It has been a well-known fact, since the clinical types formerly known as tumor albus, atheroma, Pott's disease, spina ventosa, etc., were first recognized, that these affections even in the graver cases have often terminated in spontaneous recovery, and that the affected persons have reached advanced age, notwithstanding the more or less impaired mobility and function of the affected limbs, the cicatrices of which show the gravity and extent of this process. As all these disturbances represent only varieties of tuberculosis of bones and joints, it is entirely useless to discuss the possibility of their spontoneous recovery.

30. *Tuberculosis of tendon-sheaths* appears partly as diffuse fungous affections of the sheaths, partly as solitary knots (isolated tubercles). Since the tendon-sheaths are generally situated close to the joints, it is necessary to warn against confounding this affection, when a fistulous opening is established, with caries of the joint or affections of the bone. The treatment consists in cutting away the diseased sheath, scraping out, etc.

31. *Tuberculosis of Lymph Glands.*—In all the tuberculous affections thus far mentioned, the lymph glands that derive their supply from the diseased region may be infected, and become tuberculous. This affection, earlier called scrofulous inflammation or cheesy degeneration, is a genuine tuberculosis. The susceptibility of the lymphatic glands of the different regions of the body to the tubercular virus, is, however, very different. The glands of the neck are by far the most frequently affected, and then those of the elbow; less frequently affected are those of the axilla, and most rarely those of the popliteal space and of the groin. It is a rare exception that tuberculosis of the inguinal glands is found, even in the gravest tuberculous affections of the bones and joints of the foot.

32. Very frequently, however, do simple hyperplastic, irritative and inflammatory swellings of the glands, such as accompany inflammatory and catarrhal processes of the skin and mucous membranes (and known as sympathetic or cosensual), later becomes tuberculous, when a certain constitutional disposition (scrofulosis) and hereditary infection is present. The glands do not subside when the affection that caused them to swell disappears; they become larger, caseate and soften, and examination after extirpation shows a true miliary and bacillary tuberculosis. This process, scrofulosis of the lymph glands, is most frequently noticed after primary affections that themselves are regarded as scrofulous, as, for example, in the case of glandular swellings after skin eruptions, chronic catarrhs, blenorrhœas, etc.

33. How far cheesy deposits not belonging to tuberculosis (not bacillary) may exist in the lymph glands is not yet decided with sufficient certainty.

34. Tuberculous lymph glands are best removed with the knife, and where we have to do with glandular lumps (Lymphdrüsenpakete), as is usually the case, these should be removed on the same principles as the affected axillary lymphatic glands in a case of carcinoma of the mamma. Scraping out the soft tuberculous glands with the sharp spoon is insufficient, since there still remains the diseased capsule of the gland, at least, and generally also the swollen and infected but not yet soft lymph glands in the neighborhood, and they will cause a recurrence. It is not always possible, however, to avoid the scraping out.

35. How far arsenic used internally may be effective in tuberculous (scrofulous) swellings of lymph glands, can be decided only by further observations. —*Langenbeck's Archiv*, Bd. 33, Hft. 1.

MODE OF FIXATION OF THE SCAPULA AND FRACTURE OF THE CORACOID PROCESS.—At the meeting of the Royal Medical and Chirurgical Society on November 8, MR. ABURTHNOT LANE read a paper on this subject. He showed that in extreme flexion of the shoulder joint the scapula undergoes a movement of rotation upon an axis whose general direction is obliquely inwards and forwards, and that this rotation is abruptly limited by the impact of the coracoid process upon the under surface of the clavicle. He illustrated the manner in which the frequent performance of this movement under the influence of considerable strain determines in such laborers the development of a coraco-clavicular articulation, the mechanism of which he had already described in the Guy's Hospital Reports, 1886. He then referred to the very great difficulty which is usually experienced in breaking down adhesions between the humerus or scapula, these adhesions being in most cases the result of inflammation. The difficulty arose from the inability to fix the scapula. He showed that the scapula can be firmly fixed by flexing the shoulder joint completely, the coracoid process and clavicle being held forcibly in apposition, and that when the scapula is so fixed against the clavicle the humerus can be rotated forcibly upon its own axis, and can be completely adducted and then abducted very considerably without the humerus being accompanied in its movements by the scapula. In this manner all adhesions between the two bones can be readily broken down. He then criticised the statements made by surgical writers that the coracoid process is always broken by direct violence, and referred to two cases quoted by the author of the article on "Fractures of the Upper Extremity," in Holmes' System, to prove the truth of the above assertion, which, he said, showed that the very reverse was true in this case, for the reason that when the shoulder-joint is completely flexed it is practically impossible to fracture the coracoid process by direct violence. He also referred to the extreme inaccuracy of published statistics of the relative fre-

quency of fractures of the several bones, and particularly of the coracoid process and acromion. He had never found a single instance of fracture of the coracoid process in the dissecting room, but he had observed that fracture of the acromion occurred more frequently than fracture of any other bone in the body. MR. W. ADAMS agreed with the anatomical and physiological conclusions of the author, but he could not concur with the surgical conclusions, for in an ankylosed joint it would not be possible for the joint to be flexed. The difficulty of fixing the scapula was not great. He had never found any difficulty himself in fixing the joint firmly. There often appeared to be plenty of movement, but this was of the scapula, and not really in the joint. In a few difficult cases the ankylosis could not be broken down, and he should recommend that such cases be left alone. MR. CLEMENT LUCAS said it was new to him that the coracoid process could be fractured in the way Mr. Lane had described, and the explanation was very easy to understand. He agreed that fracture of the acromion process was more frequent than was commonly supposed. Attempts at flexion of the shoulder would inevitably bring the coracoid process into contact with the clavicle, and so afford the necessary *point d'appui*. MR. HOWARD MARSH thought the explanation of fracture of the coracoid as likely to be the true one. He considered that the difficulties of fixing the shoulder-joint were not so great as the author had inferred. In breaking down adhesions the use of anæsthetics was most desirable. If the joint be really fixed as determined under anæsthesia, he should advise that the case be left alone, for any temporary improvement was most likely to be followed by increased ankylosis and increase of the joint disease. The acromion may be apparently detached by the chronic rheumatic joint disease. MR. LANE considered that the changes in the acromion were more frequently due to injury than to a rheumatic process.—*Lancet*, Nov. 12, 1887.

CARBOLIC ACID IN TRACHOMA.—Starting from the supposition that trachoma is caused by a specific microbe (as was first pointed out by Sattler; and later on supported by independent researches of Michel, of Würzburg, and E. E. Schmidt, of St. Petersburg; see the *London Medical Record*, April, 1887, p. 166), DR. J. SHTCHEPKIN, of Krasnoüfimsk, has attempted (*Vratch*, No. 42, 1886, p. 479) to destroy the pathogenic agent by means of injecting into the palpebral mucous membrane two or three drops of a 2 per cent. solution of carbolic acid. Seven successive cases of follicular trachoma were treated by him after that plan. In all of them, after two or three injections (repeated at intervals from three to twenty-two days), a complete and radical cure was obtained, trachomatous grains, however large, tracelessly disappearing in the course of a few weeks. Since the carbolic injection is painful, a 2 per cent. solution of cocaine should be instilled into the eye about five or ten minutes before the operation. Lachrymation and redness caused by the latter disappear spontaneously in ten or twenty minutes. Shtchepkin's successful results induced Dr. E. P. Serebrennikova, a lady doctor attached to the Permgubernskaia Zemskaia Infirmary, to try so simple a method in nine trachomatous cases of her own. As may be gathered from her short communication in the *Vratch*, No. 32, 1887, p. 614, she is far from being prepared to support his statements. Follicles disappeared in only one of her cases—in that of a recent trachoma in an official of 24, where the carbolic injection had given rise to intense local inflammation. Even in this case the successful result is attributed by the author to the inflammatory process, and not to a specific (antibacterial) action of the drug. In the remaining cases, the injection produced a more or less considerable œdema and other inflammatory phenomena, which in two cases attacked also the cornea, and intensified already existing pannus. After the reactive irritation had been allayed, the conjunctiva was found to be in an exactly identical morbid state as before the treatment. Hence the author gave up any further experimenting in that direction. It is just possible that such a striking difference between the result of the two authors might, at least partly, depend upon a difference in the procedures respectively adopted. While Dr. Shtchepkin lays great stress on injecting into the most superficial layers of the mucous membrane ["it is the most essential condition," he says, "therein the operator's whole skill consists"], Dr. Serebrennikova seemingly always injected into the submucous cellular tissue.—*British Medical Journal*, Nov. 12, 1887.

ANTIFEBRIN IN THE FEBRILE DISEASES OF CHILDREN.—HIDOWITZ reports the use of antifebrin in fifty-three cases, including four of scarlatina, eleven of measles, eleven of measles with subsequent pneumonia, two of measles with tuberculosis, two of facial erysipelas, four of croupous pneumonia, two of lobular pneumonia, two of pleuro-pneumonia, four of bronchitis, three of tuberculosis, four of follicular tonsillitis, three of gastricismus, one of acute intestinal catarrh. An interesting fact is that at the end of ten or twenty minutes after the medicine was taken the temperature began to decline, and continued steadily until it reached its lowest mark. After remaining at this point for a short time it began to rise again. The rapidity with which the temperature declined seemed to depend not so much upon the size of the dose as upon the peculiarity of the child and of the disease. Another observation was the very favorable effect upon the general condition of the children. Those who had previously been restless and fretful became quiet and soon fell asleep. In several instances the severe symptoms connected with collapse were quickly relieved after the ingestion of the medicine. Scarlatina and erysipelas were more rebellious to the antipyretic action of the drug than any of the other diseases in which it was used, the temperature falling only a few tenths of a degree. In pneumonia occurring as a complication of measles, in croupous and lobular pneumonia, in measles complicated with tuberculous affections of the stomach and intestines, the antipyretic action of the drug was prompt and energetic. The pulse be-

came fuller, its frequency being diminished, though not always in proportion to the decline of the temperature, the respiration became deeper and more quiet. The drug was given in the form of powder, and in doses of 1½ grains to children three or four years of age. To older children, 3 or 4½ or even 7½ grains were given. Small doses usually sufficed for poorly nourished children, the reaction being much more energetic than in more robust children. As much as 30 grains were given in the course of a day. The antifebrin never produced any perceptible effect upon the duration of the disease. In some cases of croupous pneumonia its use was accompanied by profuse perspiration, with cyanosis of the face and the ends of the fingers.—*Archives of Pediatrics*, October, 1887.

SUDDEN ŒDEMA OF THE GLOTTIS AS A FIRST SYMPTOM OF CIRRHOTIC KIDNEY.—B. FRAENKEL reported an interesting case of this kind before the Berlin Medical Society. The patient was suddenly seized with dyspnœa, and when the author saw him he was sitting on a chair and complaining of the want of breath. A laryngoscopic examination showed swelling of the epiglottis and of the arytæno-epiglottidean folds. As the patient was stepping into the carriage to be taken to the clinic, where tracheotomy was to be performed, he dropped dead. At the autopsy intense œdema of the epiglottis and the arytæno-epiglottidean folds was found. There was very marked contraction of the left kidney. The right kidney was enlarged and in a condition of parenchymatous swelling. The immediate cause of death was œdema of the larynx caused by the condition of the kidneys. There was absolutely no effusion in any other part of the body. The patient had never shown during life signs of any disease of the larynx. The whole duration of the disease was not more than an hour. The patient must certainly have suffered with albuminuria for some time, as the urine removed after death was rich in albumen. In the discussion that followed, A. Baginsky remarked that such a condition was observed also in the acute nephritis following scarlatina. De Bary, of Frankfort, had been the first to describe acute œdema of the glottis as a first symptom in scarlatina nephritis. Since then a few cases of the kind had been recorded. —*New York Medical Journal*, Nov. 19, 1887.

TREATMENT OF RUPTURED AND DIVIDED TENDONS.—DR. C. H. WILKIN presents a table of thirty-two hitherto unpublished cases, of which twenty-eight were treated by suture, with good results in twenty-two and benefit in all. He considers the injury in two classes, simple and compound. While in the former almost all authorities seem to agree that rest and position are sufficient, yet it would seem that a better result and certainly closer apposition could be obtained by the use of the suture; of the propriety of the suture in the compound variety, there can be no question. The plan of treatment recommended, is first thorough cleansing of the part and irrigation of the sheath of the tendon with a 1–1000 bichloride solution—except when the knee-joint is involved, when it should be 1–5000—by means of a small English catheter with a syringe attached, cocaine anæsthesia, and the use of silk-worm gut suture, two sutures being necessary in the average tendon, one being carried transversely through the tendon and the other antero-posteriorly.—*Annals of Surgery*, August, 1887.

OIL OF TURPENTINE IN DITHTHERIA.—RÖSE, of Hamburg, has treated 58 cases, with a mortality of 5 per cent., as follows: He gave oil of turpentine three times a day in teaspoonful doses, mixed with spirits of ether—℥iv of ether to 1 teaspoonful of oil of turpentine. A teaspoonful of a 2 per cent. solution of sodium salicylate was also given every two hours. Externally an ice-bag was used, and gargles of a 1 per cent. warm solution of chlorate of potassium. This treatment gave the following results:

1. Rapid lessening of the pulse-rate and of the temperature; 2. Rapid alleviation of the subjective symptoms; 3. Shortening of the duration of the illness; 4. No exacerbation of the local process after the first dose of turpentine; 5. Only once was there danger of suffocation, and tracheotomy was done.

Röse thinks that pencilling the throat as done in private practice, is generally useless. He uses great caution in pushing the turpentine in anæmic cases, and in patients with weak hearts; and excessive cardiac action, from any cause, was carefully treated. The food given in his cases consisted of bouillon, old port wine and milk; and ice and aërated fruit juices were given to quench thirst. The turpentine was discontinued when the patient was free from fever. In ordinary cases doses of from 3 to 5 drachms were used, and no intoxication was seen. In one case paralysis occurred, but the patient recovered under the use of chlorate of potassium.—*Therapeutische Monatshefte*, October, 1887.

PHYSIOLOGICAL ACTION OF OIL OF TURPENTINE. —At the close of an article on this subject DR. HOBERT AMORY HARE gives the following summary:

1. The oil of turpentine in small doses, resembling those ordinarily given in practical medicine, produces an increase in the number of the cardiac beats due to a direct stimulant action on the heart.

2. In larger doses it produces distinct slowing of the pulse, due to a stimulation of the pneumogastric or inhibitory centre.

3. That its influence on the vaso-motor system, if at all, is very slight, either with large or small doses.

4. That poisonous doses (5 c.c. to 10 c.c.) (ℳ. 80 to 160) produce death by cardiac failure when injected directly into the jugular vein.

5. That the drug in small doses increases reflex action somewhat, but in large doses decreases it, the increase being due to a stimulation of the spinal cord, and the decrease due to depression of the sensory side of the cord and afferent nerves.—*Medical News*, Nov. 19, 1887.

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HEART-PUNCTURE IN CHLOROFORM NARCOSIS.

The last contribution to the subject of cardicentesis, and the most complete, is a paper read by DR. B. A. WATSON, of Jersey City, at the last meeting of the American Surgical Association. The paper is all the more valuable from its containing the details of sixty experiments made on dogs, forty of the animals being injured and twenty uninjured at the time of the experiments. The experiments were made for the purpose of determining the possibility of arousing the heart into action, after its action had been stopped by chloroform narcosis, by the introduction of a needle into the organ. It will be remembered that the operation of cardicentesis was first proposed and performed by Dr. B. F. Westbrook, of Brooklyn, in 1882, though previous to this time, the heart had several times been punctured unintentionally without bad results.

In all these experiments commercial chloroform was used. In the first 50 cases the chloroform was administered rapidly, and atmospheric air was, so far as possible, excluded from the animals; in the remaining 10 cases the chloroform was given slowly, and contained a large percentage of air; in the first 50 cases, then, there was a certain degree of asphyxia with the narcosis. In the last 20 cases artificial respiration was used with special care, the animals in these cases having suffered no traumatism. Of 47 cases in which the cessation of the heart's action and of respiration as the result of the narcosis was noted, in 44 the heart's action ceased before respiration, in 1 case the heart continued to pulsate one minute after respiration had ceased, in 1 case the heart pulsated for thirty seconds after the animal had ceased to breathe, and in 1 case respiration and cardiac action ceased at the same time. In 34 experiments chloroform was administered rapidly, and without the admixture of atmospheric air, the average continuation of respiration after the cessation of cardiac action was nearly forty-one seconds, the maximum being two minutes and the minimum five seconds. In the 10 cases in which chloroform was administered cautiously, and with a free admixture of atmospheric air, there was not a single case in which the heart stopped before the animal ceased to breathe.

The punctures made in the 60 experiments were as follows: In the right ventricle, 38; left ventricle, 6; right auricle, 6; superior vena cava, 3; inferior vena cava, 2; apex of the heart, 2; not stated, 1. The resuscitations that followed these punctures were: right ventricle, 9; right auricle, 1. The first 40 experiments gave 4 recoveries, and the last 20 gave 6; but it is to be remembered that the first 40 dogs were suffering from traumatism, and that the experiments were made for the purpose of determining the *effects* of cardicentesis, while the experiments in the last 20 cases, were made for the purpose of showing the efficiency of cardicentesis, when used in these cases in connection with artificial respiration.

In regard to the effects of a puncture of the heart in chloroform narcosis, a study of the paper shows that of the 60 punctures in two only did the heart fail to respond, the puncture being made in one of these cases one minute and thirty-five seconds after cessation of cardiac action, and the needle was so firmly held by the tissues through which it passed that it could not be swayed by the feeble pulsations of the heart; and in the second case the puncture was made four minutes after cessation of cardiac action, and one minute after cessation of respiration.

The report shows that needle-puncture alone was sufficient to arouse the heart to action in 22 cases, the average time that had elapsed between the heart-stop and the puncture being one minute and twenty seconds—the longest period being two minutes, the shortest one minute. In two of these cases the action excited continued, the other functions were reëstablished, and the animals recovered.

A most important question is, Can the heart that has ceased to beat be excited to action by needle puncture? A careful reading of the details of the experiments will leave no doubt that in the 22 cases the hearts's action had really ceased, and that the puncture did not simply stir up to increased action a heart that had almost stopped. In almost all of

the experiments it was noted that cessation of the heart's action commonly occurred before cessation of respiration; but when the needle previously introduced into the heart this order was reversed.

Should the puncture be carried into a cavity of the heart in order that blood may be abstracted? From the conditions found after death from chloroform narcosis "it may be rationally claimed that blood may be advantageously drawn from the right side of the heart in chloroform narcosis. I am, likewise, fully assured that this procedure is not only theoretically correct, but also entirely practical and highly advantageous. What more rational treatment can be adopted in cases of chloroform narcosis than the puncture of the heart and the abstraction of blood." In cases in which respiration and the heart's action have ceased the urgent indications are to restore these functions as soon as possible; and the indications are so urgent that a resort to measures that would not otherwise be justifiable may be said to be demanded. The only deaths in Dr. Watson's experiments that may be fairly charged to the puncture are those due to the puncture of the vena cava. Punctures of the auricles were sometimes followed by considerable hæmorrhage into the pericardial sac, and such wounds are by no means free from danger. "The punctures made into the ventricles are not attended by any hæmorrhage from the interior of the organ, but there are occasionally found a few drops of blood within the pericardial sac, which has been poured out from some wounded cardiac vein." Dr. Watson draws the following conclusions in regard to cardicentesis in chloroform narcosis:

1. Puncture of the heart, especially the right ventricle, stimulates muscular contractions and may be advantageously employed in the treatment of this morbid condition.

2. The best results are obtained when abstraction of blood from the cavity of the ventricle is combined with the stimulating effects produced by the entrance of the aspirator needle.

3. Puncture of the right ventricle is a safer and more efficient operative procedure than puncture of the right ventricle.

SECTS AND SCHOOLS OF MEDICINE.

The New York *Medical Times* (homœopathic) for November, 1887, says editorially:

"The two greater so-called schools in medicine seem to be failing entirely in their duties to each other and to the public! There has been and is now a regular system of boycott going on in both of them toward such of their associates as dare to have opinions respecting ethics at variance with what these schools choose to dogmatically lay down as guides in their relations with one another.

"In practice the great majority of both these bodies are in substantial accord so far as the use of therapeutic means is concerned; that is to say, all assert their willingness to adopt that means which will best subserve the interests of their patients.

"In the Old School class, many seem afraid to employ small doses, even when confident of their superiority, for fear of the homœopathic designation, and the homœopathic class fights shy of the large dose, even when absolutely called for, for fear that they may be termed allopaths! Both these sects are thus doing themselves and the public an injury, and all on account of the sectarian designation.

"How much better it would be for both of these parties to come out honestly and squarely and admit that there are occasions when small doses would be best, and that there are other instances when the larger, even the largest, may be required, depending entirely upon the effects to be obtained, and the mode of selection will be easily admitted, as it will be determined also by the end desired. The Old School undoubtedly occupies the higher relative plane in the controversy by being free from sectarian designation, but still as a body it has a great responsibility at this juncture, and one that it should not shirk nor attempt to temporize with.

"It is highly improper to use the expression 'practicing both ways,' and if there were no sectarian designation there would be no opportunity to make such a statement!"

Exactly so! And if there were no parties arrogating to themselves a "sectarian designation" or attempting to delude the people into the belief in "Old Schools" and "New Schools," there would be no occasion for any "system of boycott." And if the editor of the *Medical Times* is correct in saying that "in practice the great majority of both these bodies (regular profession and the homœopathic) are in substantial accord so far as the use of therapeutic means is concerned," why continue to use a "sectarian designation" for either? He justly concedes the fact that what he calls the "Old School" is "free from a sectarian designation," and as that embraces eight-tenths of all the practitioners of medicine in this country, why do not the remaining two-tenths abandon their antiquated pretensions concerning special designations and special schools, and be content with the fair title of Doctor of Medicine? The matter is entirely in their own hands. They selected their own exclusive "sectarian designations," and they can abandon them whenever they please. But so long as any number of medical men choose to designate themselves by a "sectarian" name as a *trade mark* for the public, they should not complain if all other medical men leave them entirely alone, so long as they adhere to such exclusive trade mark.

YELLOW FEVER.—Reports from Tampa, Florida, to November 23, state that during the preceding two days there had been 5 new cases of yellow fever and 1 death, although the temperature had been below the freezing point. On the 24th no new cases and no deaths, and the nurses from Savannah and part of those from Key West had been sent home. The whole number of cases reported during the progress of the epidemic is 380 and 71 deaths.

APPOINTMENT.—The Chair of Surgery in the Rush Medical College, made vacant by the recent death of Professor Moses Gunn, has been filled by the appointment of C. T. Parkes, M.D., already well known as the Professor of Anatomy in the same College.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Special Meeting, September 17, 1887.

THE PRESIDENT, THOMAS M. DRYSDALE, M.D., IN THE CHAIR.

DR. GEO. GRANVILLE BANTOCK, F.R.C.S. EDIN., London, England, made some

REMARKS ON THE REMOVAL OF UTERINE FIBROIDS BY ABDOMINAL SECTION.

He said that the tumor that formed the text for his remarks had been removed the day before, from a single woman æt. 36, a patient of Dr. Joseph Price, and weiged between 5 and 6 pounds. At first sight he had doubted the propriety of operating, because there seemed to be no indication for interference beyond the rate of growth of the tumor, and because the patient, as he had been assured by Dr. Price, very much minimized the extent of her sufferings. The matter was thoroughly explained to her; the danger of the operation was made clear, and it was pointed out that if operation were necessary at some time, she would never be in a more favorable condition for it. The patient was aided by her mother in coming to a decision, and he was struck by the readiness with which they both decided in the affirmative. This was so far fortunate; for it would be seen that the tumor had in its upper part already undergone cystiform degeneration (here an incision was made into the cyst before the Society, giving exit to over half a pint of a thin sero-sanguinolent fluid). He was happy to say that the condition of the patient was most satisfactory.

Dr. Bantock then proceeded to the general subject of the removal of uterine fibroids by abdominal section, which he said was a very important one. He pointed out that operators were to be divided into two schools; the one preferring to treat the pedicle by the intra-peritoneal method, the other preferring the extra peritoneal. The advocates of the former based their arguments on the success which has resulted in the operation of ovariotomy, from the introduction of the intra-peritoneal ligature of the pedicle. But it was scarcely necessary for him to show how fallacious such reasoning was, for the conditions were so dissimilar. It was true that there were many different forms of ovarian pedicle: it might be large or small, long or short, broad or narrow, thick or thin; but they were all essentially of the same character, and capable of being more or less easily secured by ligature, which might be confidently relied on if properly applied. On the other hand, the uterine stump is very different. It is composed of muscular fibre, white and yellow elastic tissue, forming a structure so peculiar that, under the pressure of a ligature tied with as great a strain as it will bear, it yields before the compressing force to such an extent that in a few hours the ligature may be quite loose. This occurs even when the pressure is exerted with the aid of a screw, and he pointed out to those who were present at the operation that at the first tightening of the screw there was complete arrest of the bleeding for the time, but that at intervals of ten or fifteen minutes the screw would take a turn or more with facility. In this way an amount of constriction was attainable which, if attempted at once, would probably lead to the breaking of the wire or the cutting of the tissues. He had just come from the meeting of the American Gynæcological Society, where he had read a paper on the subject of the treatment of the pedicle, and where the opposite school was so well represented in the person of Dr. Martin, of Berlin, and he had the satisfaction of feeling that, for the time at least, he had established his position.

Now the pedicle in this operation varies very much, not in the nature of the tissues forming it, but in the extent and manner in which the parts are involved. Thus the tumor may spring by a distinct pedicle from the fundus, or some part of the free surface of the uterus. In such a case the application of the extra-peritoneal method is very simple, and his results have been uniformly good; for in thirteen of these cases, all the patients recovered. On the other hand, of all the cases of this kind treated by the ligature and intra-peritoneal method, five in number, only one was successful. Moreover, he had attempted the method in several cases and had been obliged to resort to the extra-peritoneal method after failure of the ligature, though preceded by compression with very powerful forceps. When the body of the uterus is extensively involved in the growth, then matters may be very much complicated. The broad and ovarian ligaments may be so lax that it is a simple matter to include ovaries and uterus in one encircling loop. Such a case is little more difficult than an ovariotomy done with the clamp. But the ovarian ligament may be so short on one side that it has to be ligatured separately. That had to be done in the case that furnished the occasion for these remarks. As a rule it is advisable, in such a case, to secure the uterus and other ovary first, to transfix the stump with the supporting pins placed across the ab-

dominal wound, to cut away the tumor, trim the stump, and then remove the ovary, lest in tightening the instrument any part of the ovarian pedicle should be pulled through the loop of the ligature. In the case under consideration it was not necessary to observe this order, as the broad ligament on the left side was very lax, while the ovarian ligament was very short. On the right side the ovary could be raised quite out of the pelvis. Sometimes both ovaries are thus tied down and have to be secured separately. The same precautions must be observed.

But the disease may involve the whole body of the uterus properly so-called. Then we must make a pedicle, and this is the most difficult state of things to overcome. It was for such a state of things he had devised his method of partially enucleating the body of the uterus and the lower portion of the tumor. The large vessels of the ovarian plexus are secured on each side by two pairs of forceps or stout ligatures, the lower of each pair being placed an inch higher than the level of the proposed constriction. Then the peritoneal investment is divided all round on a level between the upper and lower forceps, and reflected downward toward the cervix and nearly to the level at which the loop of the serre-nœud is to be applied. In doing this it is necessary to seize the peritoneal edges with forceps placed at intervals of about an inch. When the reflection is completed these instruments are collected and raised up and the wire loop is applied outside of the peritoneum. Sometimes, and especially when it is desirable that the patient should not lose much blood, it is well to throw an elastic ligature around the uterus and broad ligament as soon as the division of the peritoneum is effected. Applied in this way, it serves to draw in the broad ligaments toward the uterus and to enucleate the tumor. It is to be removed as soon as the serre-nœud is applied—above or outside it, of course. In this way an inch or more in the length of the pedicle may be gained. Remember, that in this method it is necessary to have the stump so long that the whole of the constricted portion must be outside the peritoneal cavity; in which position it is to be retained by the transfixing pins which pass through the stump just outside the wire loop and rest on the parieties on each side of the wound. While the peritoneum is being reflected, the tumor should be held up by the assistant, and thus it rises gradually out of the pelvis with the pelvis with the uterus. One precaution to be observed very carefully in these cases, is to transfix with the pins *before* cutting away the tumors. He once lost a patient through the non-observance of this precaution. The last steps are to cut away the uterine tissue to within a quarter of an inch of the pins, and to trim the loose peritoneum by cutting it away to within half an inch of the loop and then stitching it from opposite sides across the surface of the stump to hold it well together. Before closing the wound give the screw a final turn if it will allow of it. Remember that the distal portion of the stump must slough off, that it is desirable that the amount of this tissue should be as small as possible, and that it is necessary to keep it out of the peritoneal cavity. You may have heard great stress being laid upon the character of the mucus in the uterus and cervical canal, and you may have observed great care used in wiping it away and setting aside the sponge employed for the purpose. One operator has gone so far as to pass an iodoform pessary down the canal for the purpose of disinfecting. This is a practice with which he has no sympathy; nor is it rational or founded on any sound reasoning. He looked on it as a bugbear and regarded it as a means of withdrawing attention from other and more important matters of detail. As to comparative results, Martin had just reported 84 cases with a mortality of 25; while Dr. Bantock was able to point to 72 cases with only 12 deaths.

Listerism.—There is some misapprehension of the value of terms. Some operations are termed *aseptic;* but the result only can prove any operation to have been aseptic. All operations are or are not performed upon an antiseptic method. Dr. Bantock has now discarded all antiseptic agents. When Listerism was first introduced, he used it in all its details, and continued to do so until he lost a patient, and had others affected by, what he felt sure was carbolic poisoning. An easy and sure test for this is the absence of sulphates from the urine. In one case of carbolic poisoning the temperature rose to 107° and the patient was almost moribund; by means of wet sheets and ice packing the temperature was brought down to normal in eight hours and she recovered. In one fatal case the kidneys were found congested; there had been acute suppression of urine. After this experience he gradually reduced the strength of the carbolic washing fluid to 1 per cent. Coincidently the proportion of sulphates in the urine increased and there was an absence of high temperature and other symptoms of hitherto unknown origin. Now, as 1 to 40 is the weakest solution that can be useful as a germicide, a 1 per cent. solution could serve no good purpose, and the carbolic acid was omitted altogether. Afterward he tried doing without the spray and results steadily improved. Of his last 100 ovariotomies only three had been lost, and of the last 78 only one. But ovarian statistics do not apply to uterine operations.

DR. W. H. PARISH was present at the operation the day before, and it was a complete illustration of what is necessary in all operations. *First*, in saving blood; Dr. Bantock was very careful to use hæmostatic forceps to secure every bleeding point in the abdominal wound before opening the peritoneum. The same economy of blood was observable in every step of the operation. Great care was also taken to avoid shock from cooling the intestines by the contact of air and consequent evaporation. Large flat sponges were pressed in to cover the intestines and prevent their escape or the entrance of blood or discharges into the peritoneal cavity. He is extremely careful about the cleansing of his sponges before reintroducing them into the wound. In placing sutures, he first passed several silkworm gut stitches close to one another near the stump. After the wound was entirely closed it was covered with clean absorbent gauze, a pile of this was placed over the stump. The whole was secured with a cotton binder,

using no adhesive plaster. So while using no germicide at any time, every care was taken to make the operation an aseptic one. Would Dr. Bantock consider it safe to transfix, ligate and drop the pedicle in case of a uterine fibroid having a thin pedicle as long as a finger? Dr. Parish had done so on one occasion and the patient died.

DR. BANTOCK replied that a uterine fibroid with a finger-like pedicle he had never seen. He has observed none smaller than half his wrist. He thinks the extra-peritoneal method safer in every case.

DR. LONGAKER made some remarks on securing the peritoneum over the base of the stump, and asked what kind of suture Dr. Bantock preferred for that purpose?

DR. BANTOCK said that any kind of suture would do; it was merely to secure a neat stump that would not spread out over the wound. He prefers fine silkworm gut for sutures. He introduces his needle from within, close to the edge of the peritoneum, and makes sure of a hold in muscle or aponeurosis and then through the subcutaneous fat and skin, to secure a firm hold and prevent future hernia.

(*To be concluded.*)

CHICAGO MEDICAL SOCIETY.

Stated Meeting, October 3, 1887.

THE PRESIDENT, WM. T. BELFIELD, M.D., IN THE CHAIR.

DR. F. HENROTIN, read a paper on

RESECTION OF THE INTESTINE FOR FÆCAL FISTULA.

(See page 713.)

DR. D. W. GRAHAM: The method of treating the mesentery and of stitching the ends of the bowel together raises legitimate questions for discussion; but if this case proves anything it proves that the doctor was correct, although he deviated from what is generally considered the best method. I have never been able to see why a V-shaped piece of mesentery should always, and necessarily in exsection of intestine, be taken out. Certainly it is safer not to do so, safer in regard to the establishment of the circulation in the bowel, and therefore ought to give better results. The apparently superfluous fold of mesentery can be taken care of in some such way, as was done in this case, and rendered harmless. In regard to the stitches, it is impossible to say whether the patient's chance of recovery would have been better with the Czerney-Lambert stitch than the one which was used; the patient having got well, the inference is that this method is safe.

I had an experience in opening the abdomen in strangulated hernia. It was a case that had been strangulated for nearly a week. The attending physician had etherized the patient on Saturday and reduced the hernia, apparently. When I saw the patient on Thursday following, there was stercoraceous vomiting, very marked, great tympanitis and all the signs of obstruction and strangulation, yet there was no external appearance of hernia. On consultation it was decided that the abdomen should be opened in the central line. This was done at once, and on introducing my hand I found a knuckle of intestine in the internal ring. On attempting to reduce it from within some force was cautiously used, more than I now think ought to be used when strangulation has existed any length of time. This failing, it was decided to cut down upon the inguinal canal and approach the hernia from that direction. The knuckle was found and released by the proper incision, was carefully examined and judged in a condition to be returned. I am satisfied that in that case the bowel could not have been freed by traction from within without rupture. The question raised, of attempting to reduce hernia by laparotomy and traction from within, was discussed not long ago by a London surgeon in one of the medical journals. I have no doubt that certain complications of strangulation can be better managed by laparotomy, but I am sure that if we attempt to reduce many ordinary herniæ in this way we will get into trouble.

DR. A. B. STRONG: I only wish to say one word in regard to the manner of suturing the intestine. It simply shows that the manner of suturing makes no difference so that you manage to bring the serous surfaces together. The sewing together of all the coats of the intestine was something new, but the operator fortified that with a row of sutures bringing together simply the peritoneal coat, which I think was the essential thing. Sutures through the entire bowel of course added strength to the gut. I must say in reference to the mesentery that I never could see any special reason for taking out a V-shaped portion of it, it seems to me that the manner in which it was treated was preferable, as it would increase the strength of the bowel.

DR. HENROTIN, in closing the discussion said: When I came to the mesentery it folded up so naturally that I had no hesitancy in putting in my stitches very carefully on one side only so as not to interfere with the circulation. I allowed no stitches to go through and strangulate the mesentery. I knew that if the mesentery was moved it would stretch the bowel and strain the stitches. In regard to the stitches, Gregg Smith (who has just published a work on abdominal surgery) is the man who told me how to put them in. It seems to me if you take a continued stitch and bring the serous surfaces together only, that it tears easily. And when it is necessary to return the bowel at once, and the patient tosses about much in bed immediately afterwards, unless you take considerable of the muscular coat and make a firm union the stitches are liable to tear through. I had two or three of my serous stitches that were about a sixth of an inch in length tear through and I had to commence over again. I would like to know one thing: would the turning in of the bowel and the consequent lessening of the caliber have a tendency to produce stricture of the bowel afterwards? If not, I feel certain that this is the best method, and do not think there is much danger of stricture high up in the small intestine from such operations.

DR. ELBERT WING exhibited a specimen of

TUBERCULAR ULCERATION OF THE LARYNX.

This specimen comes from a case that was posted at the County Hospital this afternoon; a man 35 years old, with chronic tuberculosis of the lungs. For a long time he had had symptoms of tuberculosis of the larynx and the diagnosis was made by means of the mirror. The only spot of special interest about the post was this larynx and the œsophagus. Both lungs were considerably involved in tubercular infiltration and ulceration, with large cavities. There was also tuberculosis with ulceration, of the intestines limited to the colon, and the hypertrophy of the glands of the mesentery. There is one ulcer of considerable size at the base of the epiglottis on the left side between the epiglottis and the tongue. The anterior surface of the larynx below the epiglottis clear down to the edge of the arytenoid cartilage is one immense ulcer, the floor is irregular, the vocal cords, both true and false, are almost entirely lost through ulceration and erosion. There is also evidence of rather marked trachitis, which would be associated with such a case. The mesenteric glands were uniformly enlarged, most of them the size of a small bean, and a point of interest in their location was that those that lay immediately along the bowel were the largest. In looking up the subject I find no reference of any consequence to tuberculosis of the larynx, except in Eichhorst and Strumpell. The latter says that in 25 per cent. of the cases of tuberculosis of the lungs there is also tuberculosis of the larynx. He says these statistics are vitiated because careful observations are not uniformly made and a great many cases do not come to the post mortem table. Eichhorst quotes a writer, Willigk, who reports 1317 cases of tuberculosis examined in which 13.8 per cent. had involvement of the larynx. This man claims that 49.6 per cent. of all cases of tuberculosis of the lungs have also tuberculosis of the intestines. This specimen is of special interest because so large a surface is involved. Theoretically, it is of some interest to remember that there may be ulceration of the larynx associated with tuberculosis of the lungs in which the ulcers are not tubercular.

SUDDEN GLYCOSURIA UNDER GASEOUS ENEMATA.

DR. FRANK BILLINGS called attention to something that happened in a case in which he had been giving gaseous enemata for pulmonary tuberculosis. The patient had been treated for about two months and has taken about fifty enemata. Two weeks ago he suddenly complained of great thirst, and at the same time said he had to rise several times at night to urinate. An examination of his urine showed a specific gravity of 1.040. Dr. Billings did not know just how much he passed in 24 hours, but it was a great deal. This glycosuria certainly occurred suddenly, and he thought that perhaps it might have some connection with the enemata. In medical books we find it stated that diabetes has a certain relation to tuberculosis. It may be the predisposing cause, or, conversely tuberculosis may excite diabetes. He immediately stopped the enemata and placed the patient upon arsenite of bromine, and small doses of codeia. Two days before the meeting the specific gravity was 1.025, and the patient does not rise at night to urinate.

SUDDEN DEATH AFTER URETHRAL INJECTION.

DR. W. T. BELFIELD related an accident that happened to a member of the Society, and which is likely to happen to any one at any time. A physician cut a slight stricture of the urethra about ¾ of an inch behind the meatus. It was done under cocaine without trouble or pain. The doctor had the patient come to his office every second day to pass a sound, and each time gave him an injection of a 4 per cent. cocaine solution, about 2 drachms, before introducing the sound. On the seventh day after the cutting the patient complained of being very nervous; had been nervous for several days and had not slept at night. The sound was introduced that day under cocaine as before. On the ninth day he returned, and an injection of cocaine was given. The patient reclined on an ordinary office chair and the doctor turned away to procure his sound and warm it while the cocaine should exercise its influence on the urethra; in less than a minute after the cocaine was given the patient complained of dizziness and fell back on the chair. Another physician in the outer office was called and together they did what they thought necessary, administering stimulants, and using a galvanic current, but in three or four minutes after the injection was given the young man was dead. He was about 28 years of age, and had been in good health so far as is known. At the post-mortem examination the body was thoroughly examined, the brain included; there was absolutely nothing abnormal found except that the kidneys were enormously congested; they were so blue that they looked like an ordinary spleen. The cause of death is open to conjecture; probably the patient was suffering from uræmia, and any irritation of the urethra would have provoked the result; certainly death could not have resulted from cocaine poisoning, since sufficient time for its absorption and circulation had not elapsed; nor is it plausible to assume that there had been an accumulation of the drug from the previous urethral injections. Doubtless an injection of distilled water would have provoked the same result. Whether the urine had been scanty or albuminous the attending physician could not say.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

DR. F. I. KNIGHT, CHAIRMAN.

ALBERT N. BLODGETT, M.D., SECRETARY.

Regular Meeting, Wednesday, October 12, 1887.

(*Concluded from page 702.*)

DR. F. W. STUART read a paper on

A CASE OF SO-CALLED VICARIOUS MENSTRUATION.

The case which I am to report to-night I saw at the Carney Hospital, from October, 1885, to March

1, 1886, during the terms of service of Drs. E. O. Otis and J. J Minot, and afterwards at the patient's home, until a few weeks before her death. It was suggested to me that the case was very interesting, and that it might be well for me to report it, since I had followed it longer than any other physician. I am indebted to Dr. Minot for the use of the careful notes he made during the time the patient was under his care.

I first saw the patient in October, 1885. She was then fifteen years old, and the following history was obtained: Her grandfather, father, four paternal uncles and aunts, and two paternal cousins, had died of phthisis, and two more cousins were then "in consumption." The patient had never been strong since 3 years old, had vomited often, and had frequent "sick headaches." She was always feverish, vomited every night if she ate a hearty supper, and so had been accustomed to limit that meal to a glass of milk. The bowels were always constipated, and she took pulv. glyccyrhiz. co. continuously. She frequently had sore eyes. In 1882, she had typhoid fever.

November 24, 1884, the catamenia appeared for the first time, lasted two days, were unattended by pain, but since that time the patient had never menstruated. At the next catamenial period, she vomited everything she ate for two or three days, and the vomiting was repeated at each period, when she also had a feeling of weight and soreness in the lower abdomen. At times, she had a pain in the right ovarian region, when a "bunch" could be felt there, though both pains and "bunch" occurred at non-menstrual periods. She had no trouble with micturition. In May, 1885, she had an epileptic fit. According to the hospital records, she was treated, in April, for a naso-pharyngeal catarrh, where a note is made, stating that a few days previously she had had an hæmoptysis, though in October she did not refer to it. From December, 1884, to June, 1885, she vomited only at catamenial periods, never between. In June, the vomiting began to be much more frequent and severe, anything but milk being vomited. In September, after long vomiting, she raised a little blood, and this was repeated several times. She complained of great pain immediately after eating, and vomited without any signs of nausea appearing.

Such was the history of the case up to October, 1885, though there seemed to be a large element of hysteria in the case, and her truthfulness as regards symptoms appeared rather doubtful. The patient was pale, anæmic, and poorly nourished, but physical examination was absolutely negative, with the exception of localized tenderness in the epigastrium. The diagnosis, it was thought, rested between gastric ulcer and vicarious menstruation. She was put on pancreatinized milk, and all went well until the end of the month, when the usual symptoms appeared, and even this milk was not retained. She now visited a "clairvoyant doctor," and afterwards a quack in New York City, who told her she had an imperforate hymen, which must be cut. She wished advice as to the cutting, but examination showed a normal hymen, as was to be expected from the history of a previous menstruation. On December 24, she visited the hospital after one of her attacks, and from that time up to March 1, careful notes of her condition were kept. On that date, December 24, she stated that, during the attacks, she had pain in her stomach as soon as food was swallowed, and this pain increased, and was accompanied by a loud, rumbling noise. She never belched wind, or passed any per rectum. After two or three hours of this pain she vomited, but evidently not undigested food. She never vomited directly after taking food, nor in less than two hours after its ingestion. After vomiting, the pain gradually passed away in about one hour.

December 22. She was sitting quietly, began to choke, and then raised some blood, less than a teacupful she said. She did not vomit at all, but coughed.

On the night of December 23, and the morning of December 24, while fasting, she raised dark, thick blood. She had no cough; usually ate no breakfast; has had night-sweats. She sat up late nights, ate very little, danced a good deal, and slept poorly. Examination, superficial, owing to the recent hæmoptysis, showed the patient to be small, poorly developed, pale and anæmic. No enlarged glands were to be seen or felt. Auscultation gave an almost puerile breathing, and expiration slightly prolonged. There was localized tenderness, limited to a small area over the epigastrium. She was told to take peptonized milk every two hours.

December 25. She raised blood four times. Each time she first began to choke, and then raised the blood, which was greater in amount than at any time before. She had considerable cough; complained of pain in the lower abdomon. The peptonized milk was retained. She was given ext. ergotæ fl. Her mother stated that the vomiting occurred at about the 24th of each month, and lasted one week. She did not think the patient vomited in the intervals. The blood seen before the last attack was mostly streaked through the vomitus, but, at the last attack, was as stated by the patient.

December 31. The patient said she felt better. There had been no vomiting, and no raising of blood since the 25th. Her weight, which had been ninety-two pounds, was now reduced to eighty-seven pounds. Examination gave a percussion-note a little higher in the second interspace on the right than on the left side. There was also a slight difference in the back, between the scapula and the spine, the left being the higher. Auscultation gave nothing abnormal. Heart normal. The lower thorax was long and pointed. There was marked tympanitic resonance on the left side of the upper abdomen. There was nothing to be seen or felt. There was tenderness in various spots, in the epigastrium, about the umbilicus, and about the edge of the ribs on the left side. She was given malt and the syrup of the hypophosphites.

January 12. She stated she had been thirsty of late, and had vomited after drinking much water.

January 15. She had severe pain for two hours

after eating some turkey; and then vomited, but the pain lasted about three hours longer.

January 19. Seemed better; had not vomited or raised blood in the few days past. She had, from the vagina, a discharge of a yellowish matter, streaked with blood. She complained of pain in both iliac regions.

January 20. Was unable to urinate, and a sitz bath and spts. ætheris nitrosi were given.

January 22. Vomited a little after a breakfast of beefsteak, but the vomitus consisted only of bile. Urination was all right.

February 3. She stated that she had been away on a visit, and, at night, was laughing, when she began to cough, and raised a tablespoonful of dark, clotted blood. She did not vomit. During the night she awoke with a "pain in her belly," and the next morning, after taking some milk, she vomited. The vomiting continued all day, but the next day the patient was better, complaining only of a sharp pain in the lower abdomen. She had more discharge from the vagina than formerly. An examination of the chest showed nothing abnormal. The patient was referred to the gynæcologist, who reported everything normal about the external genitals, and would examine further only under ether. From the history he obtained, he was inclined to think the case one of vicarious menstruation.

February 19. The patient returned, and stated she had been quite well up to the 11th, when, after going to the city, she vomited sour food, but no blood. On the 12th she was better, but vomited again on the 13th, up to which date she felt well, but then she had pain in both groins, so severe that she was doubled up. Before and during the pain, she had passed bloody urine during several hours, and at frequent intervals afterwards, she passed a urine which was pale, clear and not bloody, but in small quantities. For a few days, the pain returned in the afternoon, though she passed no blood.

On this date, the 19th, the patient said she felt well, though she was weak, and had no appetite. She said she always had diarrhœa during the attacks of vomiting, but at other times, she had marked constipation. Walking and riding in the horse cars, she said, always brought on the pain, though she could ride in a carriage without experiencing any trouble. She was very nervous, easily startled, and said she had "nightmare."

On Feb. 23 she presented no definite symptoms.

I have alluded to treatment a few times, but have not intended even to outline it. Symptoms were met as they arose, but the main object kept in view was to give a thorough course of tonics, which was done by the exhibition of iron, arsenic, extract of malt, and syrup of the hypophosphites almost constantly.

After March 1st the patient did not return to the hospital, and, indeed, discontinued treatment. I was, however, interested in the case, and made weekly calls to keep myself informed as to her condition. This did not seem to change much, though she grew weaker constantly, and coughs, night sweats, and loss of strength became the predominant symptoms. Towards the end of April I again examined the chest, and found evidences of consolidation at both apices. The patient now developed a fever, which remained for weeks at about 102.5°, diarrhœa of a very severe character set in, and the patient rapidly sank, and died in about two months.

Unfortunately, no autopsy could be obtained.

I feel some diffidence in giving my opinions regarding a case so difficult of diagnosis as this. Still, I will venture to offer a few remarks concerning the diagnosis.

In the first place, it is certain that the patient died of a florid form of phthisis. I do not think that she had a gastric ulcer. To be sure, there was vomiting, sometimes hæmatemesis, and localized tenderness; but, opposed to this, the patient never vomited until two or three hours after the ingestion of food, and the blood vomited only streaked the vomitus. Beyond this, there were days when she retained hearty food, and the gastric symptoms were limited to certain periods.

I believe, then, we are to consider three affections as possible during the earlier part of the trouble, namely, vicarious menstruation, the hysterie gastrique of the French writers, and phthisis.

No one of these meets the case satisfactorily. The manner of vomiting, and the character of the vomitus—partially digested food, streaked with blood—suggest the hysterie gastrique. But later, there was hæmoptysis; that is, the blood was coughed up, not vomited, came probably from the respiratory, not the digestive tract.

Vicarious menstruation may occur from both tracts, but there had been normal menstruation, and the absence of the menses was only to be expected in one so poorly developed and anæmic. Again, the vomiting of blood was only a comparatively late symptom, and, notwithstanding the patient's assertions, no direct connection with menstrual trouble could be definitely established. In December she coughed up blood, but did not vomit; in January she vomited, but raised no blood in any way, and there was an apparent attempt at menstruation; and in February there were no definite symptoms. Both of these affections are extremely rare, and both offer such difficulties in the way of diagnosis, that it is only after a very careful study of the case that one is warranted in making such a diagnosis. Either may have obtained and been followed by phthisis.

It is a question with me whether there was ever any disease beyond phthisis. To be sure, it is hard to reconcile all the symptoms of this patient with this view, especially when such careful observers as the gentlemen mentioned failed to find signs; but it is the one disease which every one connected with the case constantly looked for, and it is the one which caused the patient's death. The uncertainties of the case prevent an absolute diagnosis, and were a constant source of annoyance in treating the case.

DR. BLODGETT said: I would like to ask if any medical person witnessed the expectoration of blood at any time?

DR. STUART: No; it was something that we at-

tempted to do; I gave notice to the mother to call me at any time that the patient raised blood. My office was only a block from where she lived, but they never sent for me. The mother was hysterical, as well as the girl, and we thought she lied a little more than her daughter did. That was one of the elements that was pretty hard to determine. It was hard to say whether she vomited the blood or raised it by coughing. She insisted that the vomitus was streaked with blood after severe vomiting. That we could see ourselves. She afterward said she coughed up thick blood; that we never saw.

DR. J. L. FOLEY asked whether the blood were dark or scarlet?

DR. STUART replied that the patient said it was dark. If it were from the air-passages of course we would expect it to be bright.

DR. BLODGETT said: I have had the opportunity of examining three cases where the presence of blood was important. One of these was a case where the blood was expectorated by the patient, to the great alarm of the family and the consternation of the physician, who could find no legitimate cause for it. It was finally made evident that the patient wilfully and voluntarily produced the blood from somewhere within the oral cavity. It was satisfactorily determined that the blood did not come from the stomach or lungs, but from some mucous tract above the œsophagus or trachea. A second case which came under my observation was one in which it was believed by the medical man and by the patient that an actual hæmoptysis had occurred, in which the blood followed coughing and was produced in a fresh or comparatively fresh condition, although never frothy. That was finally, by close study, found to be due to an oozing from the nasal or pharyngeal mucous membrane, which trickled down into the larynx, and then was coughed from the upper portion of the respiratory tract. No symptoms have followed the accident, and they have for many months been carefully watched for. Once or twice it has been noticed in other members of the same family, but it seems to be due to a peculiarity of the patient, and not to organic disease.

The third case was one in which, absolutely, blood was lost in large quantities; sometimes in quantities estimated at from a teacupful to half a pint. I have never seen the hæmoptysis going on, but I have seen the blood which was produced after the expectoration had ceased. This blood was supposed to come from the lungs. In consultation, a physician of great experience and eminence pronounced it blood of pulmonary origin. On one occasion I was fortunate enough to see the blood which was formed in distinct coagulæ. The nurse, who was competent, said that it was found in the mouth in that form, so that the finger had to be used to break up the clumps. This showed that it did not come from the lungs, but from some other part of the body; and I came to the conclusion that it all came from the stomach. The autopsy showed that it came from the exudation of blood through the wall of the stomach without ulceration. There was no other source from which it could have been derived. The lungs were diseased but there were no cavities, and no signs of a pulmonary origin of the hæmorrhages. There was no crackle, which usually follows the effusion of blood into the pulmonary tract. These three cases have been of interest as presenting three conditions, in each of which the expectoration of the blood was the principal symptom, each of which seemed to analyze itself into a different form from the others, and that is the reason why I asked the question whether any medical person had seen the expectoration going on in this particular patient.

DR. VICKERY: I would like to ask Dr. Stuart how regularly, according to her own statement, the loss of blood was. Was it at just the right time?

DR. STUART: Everything depends on how a man reckons the right time. She said that she began about the 18th to feel bad, on the 23d she began to vomit, the vomiting lasted just one week, and then it all let up until the next 18th. This was the same whether the month had twenty-eight or thirty-one days.

DR. VICKERY: How many months were there?

DR. STUART: From October to January. At each period the symptoms differed. She came to the hospital in October, and said that she had had the vomiting in September. We took her word for that, and then the question was whether she had gastric ulcer. She was told to go home and eat a good hearty meal. She came back and said: "Doctor, the moment I took it I vomited." We put her upon pancreatized milk. Her vomiting began in June, but she raised no blood then. In December she "coughed" up the blood, but did not vomit any. In June she had made an apparent attempt at menstruation. At one time previously she had had a discharge of blood from the anus.

DR. VICKERY: The hæmorrhage was seen?

DR. STUART: Yes; she did have hæmorrhages. Each time there was blood somewhere.

DR. BUCK: Did she have a small thorax from tight lacing?

DR. STUART: No; she never wore corsets.

DR. VICKERY: I don't think the slightest belief should be given to hysterical patients. One once brought me some live earth-worms which she declared she had vomited. That well illustrates the unreliability of this class of patients.

DR. STUART: The chief interest seems to centre upon this; the girl was an only daughter. The mother was a widow and thought everything of the girl. The father died of phthisis. There was phthisis everywhere in the family. We asked the question, Is this phthisis? We found no signs in the lungs. The question of vicarious menstruation was raised. It seems to me that the whole thing from beginning to end may be phthisis. A physician in Boston told me he was called to see such a case out of town. He found the patient with marked signs of phthisis; cavities in both lungs. The attending physician, who was a man with a large practice, said that it was vicarious menstruation, and that when puberty was established the child would get well. In this case I can only suppose that she had phthisis, and we did not get the signs. Dr. Bowditch exam-

ined her once. She was examined by several other gentlemen, all of whom pronounced her entirely free from signs. Still, I believe that phthisis was there. I think the whole thing was phthisis.

DR. FOLEY: Did she have any of the symptoms of phthisis, as distinct from the physical signs?

DR. STUART: She was feverish all the time, she said. She also had night sweats. She said she did not have much cough. but I do not think any reliance was to be placed on that.

DR. KNIGHT: How long from the first blood to the appearance of physical signs?

DR. STUART: Seven months, from October to April.

DR. KNIGHT: It seems to me it must have been the experience of all physicians who have seen such cases, that patients not infrequently have hæmoptysis come on sometimes for months or years before the appearance of physical signs. I have frequently met such cases. It is quite the rule, I should say, for patients to have hæmoptysis, and then phthisis after six months. It seems to me that it is not inconsistent with the development of tuberculosis. Supposing when you first examined the case you had found physical signs in the lungs. The question of menstruation would not have entered your head.

DR. STUART: Certainly not.

DR. KNIGHT: Why the difference?

DR. STUART: She was so positive that it occurred so regularly. They questioned her vomiting blood as she said, but certainly I saw vomitus that was streaked with blood.

DR. KNIGHT: Do you think that gynecologists would accept the fixed date?

DR. STUART: No; I do not think so. My view of the case was that it was phthisis. That the vomiting that we had here was hysterical. That the periods came so was due tc the hysterical condition of the patient. I don't see why a phthisical patient might not vomit every three or four weeks. It is very easy for a man to be misled, I think. In this case vomiting occurred every three or four weeks in the course of the phthisis. In regard to the question of hysteria, it was admitted by the other physicians who saw her, that her statements were all open to doubt. It does not stand on my own authority.

DR. BLODGETT then exhibited the following *new instruments:*

A STETHOSCOPE, WITH A MEMBRANE ARRANGED IN THE BELL EXTREMITY

in such a manner as to intensify the sounds. Of its efficacy he could not speak, as he had not tried it. It also had the merit, the advantage of which was first pointed out by Dr. Haven, of having the flexible tubes so long that the examiner may keep at a greater distance from the patient. The value of this is seen especially in the case of children, and patients infested with vermin, or in persons in whom the breath is unusually offensive.

THE AVITREOUS THERMOMETER.

Its chief advantage is in the fact that it will not be readily broken. Some of the members would criticise it on the ground of cleanliness, since it has lines of union which would be difficult to keep free from impurity.

A NEW DOUBLE CATHETER.

The return current is by a series of channels formed by the urethral wall on the outside, and grooves in the metal on the inside. It may answer a useful purpose when it is desired to wash the surface of the urethral membrane.

A SERIES OF ANTISEPTIC INSTRUMENTS WITH AN ADJUSTABLE HANDLE,

which allows the metal portions to be readily removed, and thus be subjected to cleansing processes that the ordinary handles would not permit. The instruments were kindly loaned by Messrs. Leach & Greene.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Effects of the Subcutaneous Injection of the Septic Vibrion—Toxicity of non-febrile Pathological Urine—Treatment of Ingrowing Nails—Nature and Origin of Leprosy—Dupuytren's Contraction and Progressive General Paralysis.

At a recent meeting of the Société de Biologie Drs. Charrin and Roger read a paper giving the results of their combined researches on the effects determined on dogs by the subcutaneous injection of septic vibrion. This microbe, according to these authors, does not cause the dog's death, as it does on the rabbit and the guinea pig, but only a local lesion. They further stated that the first inoculation generally confers immunity on the animal, and with one exception, the dogs operated on became refractory to a second inoculation. M. Chauveau, Professor of Experimental and Comparative Medicine at the Faculty of Lyons, asserted that these results are quite similar to those he has obtained with the microbe of gangrenous septicæmia, which is analogous to the septic microbe.

In a very interesting paper by Dr. V. Feltz on the toxic power of non-febrile pathological urine, the author, in referring to a previous note in which he demonstrated that the toxic properties of febrile urine are far greater than those of non-febrile urine, explained that this fact does not result from the density of the former. He has made a series of experiments upon the noxious action of febrile urine, taken from glycosuric, albuminuric and icterous patients, and from patients who were cachectic through cancer or anæmia. The urine employed was quite fresh, filtered, and analyzed. He then heated it to the temperature of a dog's body and injected it into its vein. The result showed that glycosuric urine of non-cachectic patients is not more toxic than normal urine. Icterous urine resulting from serious renal lesion, and urine of patient's affected with cancerous cachexia or serious anæmia, are considerably more toxic than normal urine. The symptoms observed during the

experiments, the kind of death which follows, the disturbances revealed at necropsy are similar to those observed when normal urine is injected in sufficient quantities to cause death. From this the author concludes that it is the augmentation of the noxious principles that determines the degree of toxic action of pathological urine, and that the salts of potassium contained in urine are the principal agents is uræmic poisoning.

Dr. Patin, of Boulogne, has published in the *Gazette des Hôpitaux* a note on the treatment of ingrowing of the nail, and as it is a most painful affection, any remedy for its cure or relief without operation will always be welcomed by sufferers. The treatment consists in first giving the patient a hot foot-bath, rather prolonged, and after having thoroughly wiped and dried the part, Dr. Patin introduces into the interstices of the nail, a solution of gutta-percha in chloroform (10 parts of the former to 80 of the latter) which is known at the Hôpital Saint-Louis under the name of "traumaticine," and employed there with success by Dr. Besnier in the treatment of psoriasis. These applications are made frequently for the first few days, and then at longer intervals. Great relief is obtained by the anæsthetic action of the chloroform. If the patient would restrict the treatment to these applications avoiding at the same time to excoriate the flesh or to injure the nail by frequent cleaning and scraping, if he has the patience to wait until the nail had sufficiently grown to enable the surgeon to cut it transversely in, taking care to blunt the angles slightly, finally, if during some time he will avoid, as much as possible, walking, and would use shoes or boots sufficiently large, complete and durable cure. It is easy to comprehend the rationale of this treatment, but it is sometimes necessary in order to complete this protective dressing, to cover the diseased toe with sticking plaster, which should be renewed after each application. Dr. Patin asserts that he has treated several cases by this method and with perfect success.

Dr. E. Besnier, whose name has been referred to in the preceding paragraph, is a dermatologist of some repute. At a recent meeting of the Academy of Medicine, this learned physician read a note on the nature, origin and transmissibility of leprosy which he concluded by the following propositions: Far from being a malady extinct, leprosy holds, on the contrary, a large place in general and international epidemiology, and it presents for this country a direct interest. It is neither a spontaneous malady, nor an accidental or toxic affection; it is a malady exclusively human, specific, with a bacterian element determined. It is transmissible in conditions partly unveiled, partly still obscure; man seems to be the only agent of this transmission; it is nearly certain that it can be inoculated, during vaccination for example; it is certain that man transports it from one place to another and that it remains attached to him, not to the soil; it is certain that it may be contracted by heredity, but the heredity peril is infinitely less than is still believed. Extrinsic conditions, such as social misery, and sordid promiscuity, favor the propagation of the malady; the inverse conditions almost annihilate its contagious faculty. In these conditions medicine can oppose to leprosy a prophylaxy which would be efficacious, based as it would be on the progress of hygiene and general sociology, without having recourse to the cruel procedures of a past age, and in remaining faithful to the principles of liberty and humanity which are the greatest glory of our epoch."

Dr. Régis, of Bordeaux, read a note at the last meeting of the Association Française pour l'Avancement de Science, on the case of a patient suffering from Dupuytren's malady coëxisting in progressive general paralysis, which the author summarizes as follows: 1. Dupuytren's malady (retraction of the palmar aponeurosis) is really, as there is a tendency to believe, the manifestation of a general state which is nearly always that of arthritism and not a local affection of traumatic origin. 2. The manifestations of gout and those of general paralysis may coëxist and be confounded in the same subject, so that one is forced to conclude as to the reality of a morbid relationship already admitted to a certain extent, and which new facts will certainly confirm and more and more elucidate. Another member observed that diabetes frequently accompanies the retraction of the palmar aponeurosis. A. B.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

An Acid that Destroys Sweet Taste—Vomiting of Gall-Stones—New Method of Ventilating—Hæmatometra with Degenerating Fibro-Myoma—Diseases of the Bible—Indian Hemp in Persistent Headache.

A new acid has been extracted, from the leaves of the plant known to botanists as gymnema sylvestra, by Dr. D. Hooper. It is a plant of the family of asclepiadiæ, which grows in India. A few drops of the acid well diluted are found to cause all sense of the sweet taste of sugar to disappear as if by magic. For instance, if gingerbread were eaten, only the taste of the ginger was perceived; if a sweet orange, only the acid flavor of the citric acid. But what is still more curious, not only the sweet taste of substances containing sugar is effaced, but bitterness is also destroyed at the same time. Hence, if a person takes sulphate of quinine after a few drops of the acid, it merely tastes like so much chalk or plaster-of-Paris. The effect in question lasts, as a rule, for one or two hours, and then the sense of taste returns to its normal condition. The active principle of the leaves of this plant appears to be soluble in water, alcohol, ether and benzol. The aqueous solution of the substances soluble in alcohol has a decided acid reaction, and the author extracted an acid from it not unlike chrysophanic acid in some respects. To this new product has been given the name of gymnemic acid, and its anti-sweet and anti-bitter properties are considered by Dr. Hooper to point to its becoming a valuable addition in prescribing, and in a short time he intends to publish a paper upon its various actions and uses.

An interesting case of vomiting of gall stones has just occurred under the care of Dr. F. M. Pope.

When first seen the patient, a stout woman with fresh complexion, had marked tenderness and a sense of resistance in the right hypochondrium, hepatic dulness was not increased, and there was no humor. The urine contained no sugar or albumen; she had had vomiting at frequent intervals for about five weeks. Two days later she had a considerable increase of pain, accompanied with internal strabismus and slight convulsions; however, she was not unconscious. During the day she vomited two gall stones of about five-eighths of an inch in diameter, with six or eight facets on each, and several smaller ones. For the next two days she both vomited and passed several gall stones, but eventually died, collapsed through combined vomiting and diarrhœa, twenty-four days after Dr. Pope first seeing her. At the post-mortem examination nothing abnormal was seen in the abdomen, no general peritonitis, no excess of peritoneal fluid, but on raising the liver the gall-bladder was found to be situated in a circumscribed abscess cavity, formed by the adhesion of the neighboring organs. The gall bladder itself was in a sloughy condition, and several ragged openings existed at its fundus, some small stones had escaped into the cavity. There was a circular opening half an inch in diameter, with well-defined edges, leading from the gall-bladder into the duodenum, at about three-quarters of an inch below the pylorus. The cystic and common ducts were patent, and one or two small stones were found in the duodenum. The stomach was healthy, and there was no ulceration from the gall-bladder into it. The rest of the abdominal organs were healthy. The total number of stones vomited weighed 170 grains; those passed per rectum 103 grains. The case is considered by Dr. Pope to be excessively interesting, as showing that a gall stone may enter the duodenum and then pass backwards into the stomach.

A new system for ventilation which is coming rapidly into vogue is the D. C. Green system. The principle of the invention is the bringing of a small stream of compressed air to bear at any point of a large tube by means of an automatic nozzle, the compressed air forcing out the nozzle, according to the degree of pressure, and thus liberating itself in an annular current at the base of the cone. This current is about 3 per cent. of the air contained in the tube or chamber in which it escapes, but it induces a strong current of the remaining 97 per cent. fed from the external atmosphere, so that a strong breeze is made to pass through the tube within which the nozzle is fixed. Exhausting nozzles are used as well as injecting ones, so that while fresh air is supplied foul air can be removed. As no fans or large pipes are required, the system seems especially applicable to vessels and mines, because the compressed air can be taken any distance and set free where ever the nozzle is placed.

Mr. W. A. Meredith at the recent meeting of the London Obstetrical Society, reported an interesting case of hæmatometra associated with a degenerating fibro-myoma, which he had treated by supra-vaginal hysterectomy. The patient, aged 46, had for some years been subject to a large abdominal tumor, and severe menorrhagia. In 1883 she was seized with pleurisy and confined to bed for eight weeks, since when menstruation had ceased. She had continual abdominal tenderness and spasmodic pains in the tumor until the latter part of last year, when she entered the Samaritan Hospital. The abdomen was then occupied by an enormous semi-solid growth. The vaginal portion of the cervix uteri was soft, but unenlarged, and its canal occluded. The tumor consisted of an enormously distended uterus with a degenerating fibroid in its anterior wall, in which was a cavity communicating by a large oval aperture with the uterine cavity, both were filled with altered blood. The entire mass weighed 15lbs, and probably contained originally at least 5lbs of blood. Mr. Meredith considered that sudden occlusion of the cervical canal, probably due to inflammatory action, caused the sudden and persistent retention, rendered permanent by partial rotation of the elongated uterine cervix during the patient's confinement in bed in 1883.

Sir Risdon Bennett, M.D., has published a small work entitled, "The Diseases of the Bible." In the briefly interesting and instructive little book Sir Risdon naturally travels over some rather dangerous, or at least contentious ground. In the introduction the author at once directs attention to the fact that the Bible, although dealing largely with methods and suggestions for the prevention of disease, really says very little indeed respecting remedial treatment, when once any ailment has distinctly manifested itself. To the precautions inculcated of old for the benefit of the Israelite we are even now indebted, according to Sir Risdon Bennett. On this head he says: "Sanitary laws are laid down in the most specific and detailed form, and the Mosaic sanitary code may be said to constitute the basis of modern sanitary legislation. Rules relating to food, clothing, personal cleanliness, intercourse with the sick and contact with the dead, and various matters connected with social life, are given in minute detail, the value and import of which, for the most part, it is easy to see."

Dr. Stephen Mackenzie says that in doses of one-half grain Indian hemp, night and morning, and continued for some time, is the most valuable remedy he has met with in the treatment of persistent headache.

G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Sphygmograph—Chronic Progressive Caries of the Bones of the Foot—Analgesic Value of Recent Antipyretics—Dressing for "Green-stick" Fractures of the Clavicle.

The fifth special meeting of the Fifth District Branch of the New York State Medical Association was held at the Pavilion Hotel, New Brighton, Staten Island, on the 15th of November, and was one of the most successful of the series that have been held from time to time during the past three years. The

papers presented were excellent, and the discussions of the various subjects brought forward in them of more than ordinary interest; while from a social point of view the occasion was a most attractive one. It is the aim of these meetings to bring together in pleasant intercourse members of the profession from different parts of the District, and all the arrangements for the one in question were of the most satisfactory character; a result due to the exertions of the committee having the matter in hand, which consisted of Drs. F. U. Johnson, Alfred L. Carroll, and W. C. Walser, of Staten Island.

The scientific proceedings were opened by Dr. Carroll, who in his lucid and finished style made a forcible plea for the more general employment of the sphygmograph; pointing out the causes why the results hitherto obtained with it were often so unsatisfactory. His remarks, which were on the clinical significance of sphygmographic tracings, were illustrated by a large number of examples, and among them were two from patients suffering with exophthalmic goitre, the tracings from which, so far as he was aware, had never before been taken.

While the sphygmograph, he said, could never supersede the trained ear of the auscultator in cardiac disorders, it might guide his examinations, and perhaps modify his prognosis; and, in addition, in some instances, it might serve to localize an internal aneurism with a precision unattainable by any other means. It was well known that the intensity of a murmur at one of the valvular orifices was not invariably proportionate to the gravity of the lesion which induced it, and, except where the attending circumstances of aggravated cases aided our judgment, we were often uncertain as to the exact condition present. Here the sphygmograph might come to our relief with a mechanical measurement more accurate than our unassisted senses. Variations of muscular tension inappreciable by the most delicate and practiced touch, degrees of obstruction or regurgitation otherwise unascertainable, were graphically recorded.

Too much, however, ought not to be expected from the sphygmograph. Its tracings in a given form of disease were not identical and diacritic; they were only generically similar. It was not to be considered as a means of diagnosis but, like other so-called "instruments of precision," as a frequently useful aid to diagnosis. Some years ago, in a paper published in the *New York Medical Journal*, he had endeavored to point out the extent and limitations of its utility; his present purpose was chiefly to call attention to a hitherto unnoticed source of misconception in regard to its registrations.

One of the principal drawbacks to the general recognition of the value of the sphygmograph was the very ingenuity expended in its improvement, which had resulted in the invention and adoption of several different patterns of mechanism, each of which gave a tracing differing somewhat from those of the others with the same pulse. Hence, since the significance of every part of the hieroglyph depended on its conformity with or departure from a known normal standard, it was necessary for the more recondite indications of any sphygmogram to be told by what instrument it had been taken; and without this information, and knowledge of the normal performance of the particular pattern of instrument employed, it was impossible to compare the results of different observations and to profit by published records. Having referred to the differences in the different varieties of sphygmographs, some of which he exhibited, Dr. Carroll stated that the rate of speed at which the slip was made to move would also materially modify the sphygmogram.

In view of these facts, and to establish sphygmography in the professional estimation which it merited, he said, in conclusion, that it was desirable—since it was not likely that any standard would be universally adopted—that all who published records of their work should not only mention the instrument which they employed, but give in addition, for comparison, its tracing of a normal pulse.

Dr. Walser, of Port Richmond, read a paper on "Chronic Progressive Caries of the Bones of the Foot, with Cases and Presentation of a Patient." The two cases referred to were of extreme interest and rarity. In one of them, a female, the trouble had commenced at the age of 10 months, and in the other, the patient presented, who was a male, at the age of 22 years. In both instances the origin of the trouble was very obscure; there being no syphilitic or other diathetic history. The disease was comparatively painless; in the case of the woman, in which it did not extend beyond the feet, completely so. In the man who was presented it also involved the tibia, and the only pain that he complained of was referred to that region.

Dr. S. H. Benton, of Brooklyn, made a valuable contribution to the subject of the analgesic efficiency of the recent antipyretics. He said that his attention was first drawn to the anodyne properties of antipyrin in November, 1886, when he found that this agent, given in a temporary febrile condition, relieved headache in a case of two years' standing, in which a very large number of remedies had been tried in vain. After three months of treatment by antipyrin, given when indicated for pain, the headache, which was located in the right mastoid region, permanently disappeared. Soon afterwards Dr. Benton tried antipyrin with excellent results in the case of his own wife. She was suffering from an attack of hemicrania, accompanied with a severe brachial neuralgia, with which she had frequently been troubled during the past three or four years. Since then Dr. Benton had several times repeated the antipyrin in similar attacks, and always successfully. While he could not say that she had been permanently relieved, it was a fact that the interval between the attacks had become much longer than formerly, and she had not complained of the pain in the brachial plexus for two months.

Having related a case of locomotor ataxia in which antipyrin gave much relief, he said that he was not sure that one would be justified in continuing the administration of such agents for an indefinite period, as would doubtless be necessary in the pains of locomotor ataxia. It was said, he continued, that the action of antifebrin and its analogues has a destruc-

tive action on the blood corpuscles, as well as a tendency to produce fatty degeneration of the heart, and if this were true, the continued use of these remedies would be pernicious medication. This theory, however, was new, and might be without foundation in fact. It was supposed that all these new antipyretics caused a reduction of the temperature by their action on the thermic centres of the spinal cord, and if this were the case, their analgesic properties could no doubt also be ascribed to the same action.

Dr. Benton said that his experience with antipyrin and antifebrin as analgesics had not been extensive, but he had used them enough to be assured that they were of decided service in many cases. The disagreeable effects from their administration in his hands had been so infinitesimal as not to be worth mentioning. He said he gave them by the mouth most often, but had also given them hypodermically with satisfaction. Some writers had stated that the subcutaneous method of administration caused great distress at the point of insertion, but he had not observed this. It seemed to him that if the needle were inserted deeply and the parts rolled freely under the thumb immediately after the withdrawal of the syringe, little or no pain would be experienced.

While in some cases, however, the administration of antipyretics as analgesics had seemed to have a desirable effect, and their superiority over other remedies used was demonstrated, he had used antipyrin and antifebrin in many more cases of painful troubles where he got no observable effect whatever. He thought it was only fair to give both sides of the question. Thus, in three cases of sciatica of long standing the patients derived no benefit whatever from either of these agents; although in one other case the pain seemed to be modified by them. In six cases of hemicrania at the menstrual period very little, if any, effect was observed. In two cases of facial neuralgia no benefit was derived, and in one case of dysmenorrhœa in a young lady there was the same negative result. While, therefore, judging from his somewhat limited experience, there was no doubt in his mind that antipyretics used as analgesics were often of great service, and would grow in favor in the estimation of the profession, he thought that we must not expect too much of them. In many instances they would disappoint us; but the same was true of quinine and many other standard drugs.

Dr. Carroll gave a demonstration of an admirable dressing for green-stick fractures of the clavicle, in which the necessary pressure over the fragment was secured by a compress held in position by the simple turns of an ordinary roller bandage passed in a figure of eight under the axillæ and over the shoulder near the seat of fracture. A paper by the President, Dr. Edwin Barnes, of Dorchester County, on "The Individuality of Disease," was, on account of the lateness of the hour, read only by title.

The concluding portion of the meeting was devoted to appropriate memorial exercises in honor of three distinguished Fellows who had died since the last meeting, Drs. Alonzo Clark, James C. Hutchinson, and Jared Linsly; and biographical and eulogistic papers were read by Drs. John Shrady, S. T. Hubbard, Ellsworth Eliot and J. W. S. Gouley.

P. B. P.

SALICYLATE OF LITHIUM.

Dear Sir:—Allow me to call your attention to a few misleading statements in the issue of THE JOURNAL, on page 637, in the letter from London. Your correspondent speaks of two new salicylates attracting attention, or being recently introduced into therapeutics, namely: salicylate of mercury and of lithia (lithium). It is especially to the latter I beg to call your attention.

1. The lithium salicylate (LiO, HO, C_{14}, H_4, O_4, HO.), is not a comparatively new preparation; it is officinal in the U. S. P. of 1880, and has been extensively used both on the Continent and in this country in doses ranging from 1 to 4 grams in 24 hours, as a remedy for rheumatism, especially of a subacute or chronic type, and also in gouty diathesis.

2. It is not insoluble, being instead deliquescent, and to keep it, it is necessary to use a very well stoppered vial. The U. S. P. says, "very soluble in water and alcohol."

3. The process recommended by your correspondent is faulty in two respects: *a.* The salicylic acid in the amount recommended is too great, if as pure as can be obtained, as 60 to 65 grams would suffice to saturate the lithium carbonate used. *b.* Distilled water cannot be used as a medium for washing, as it will dissolve the lithium salicylate very readily.

4. The dose recommended is too great under usual circumstances. During an administration of the drug for nearly five years I have found the most suitable dose to be 1 gram three or four times a day in a glass of water, but even in that dose it will often prove noxious, causing distress of stomach, tinnitus aurium, vertigo and dizziness.

As to salicylate of mercury the correspondent is probably correct, although, when making a small quantity of the salt, I find it to be reddish grey instead of greyish-white; but probably this is due to the process. I found it insoluble in water and only sparingly in alcohol. Yours very respectfully,

OSCAR A. FLIESBURG, M.D.

Hudson, Wis, Nov. 17.

THE SUDDEN DEATH OF DR. CHANDLER.

Dear Sir:—The courteous and able reply of Dr. Babcock to my note, as to the manner or cause of death in cases like that of Dr. Chandler, deserves cordial acknowledgement and a word of explanation. Dr. Babcock very properly refers to the lack of clinical and post-mortem data, the absence of which gave perhaps chief occasion for my interrogatory. The query was not as to the pathology of the special case of Dr. C., but rather a general proposition, how a lesion of the heart so slight in its previous effects could cause *instant* death. The writer's personal relation to Dr. C.'s illness was limited to the examination mentioned, which did not include the heart. As to the presence of a mitral systolic murmur, the certainty of which Dr. Babcock is inclined to ques-

tion, I need only to say that my authority was a medical gentleman of this city whose methods of instituting physical examinations differ widely from those presumed by Dr. Babcock. It is, however, a pleasure to state that the diagnosis evolved by the able reasoning of Dr. Babcock is nearly identical with the writer's, viz., that in the enfeebled condition of Dr. Chandler his exertion in extracting the patient's tooth (often a great exertion) induced ventricular over-distension, from which the heart was unable to rally. In other words, a fatal faint and not "heart disease;" if otherwise, why should death from heart failure in chloroform narcosis or puerperal cases of instant death from heart failure upon the accession of gravity upon the blood column, from change of position, not be "heart disease" as well.

H. C. MARKHAM, M.D.

Independence, Ia., Nov. 22, 1887.

NECROLOGY.

JOHN PIERCE, M.D.

John Pierce, M.D., of Edgartown, Mass., was born in Lebanon, Ct., Nov. 25, 1805, but in 1808 became a resident of Monmouth, Me., where he received his academical education, died at his residence, March 22, 1885. He studied medicine with the late Gov. Hubbard, of Maine, and at Bowdoin College, where he graduated in 1833. He practiced his profession in Wales, East Pittston and Gorham, Maine, and while in the last named place was commissioned surgeon to accompany the troops called out on account of the trouble over the North-east Boundary question. In 1839 he removed to Edgartown, where he was in active practice until 1879, and where he resided to the time of his death. For eight years he was surgeon in charge of the United States Hospital at Vineyard Haven. He was examining surgeon for the Government, of applicants for pension ever since the war of the Rebellion, was also medical examiner for Dukes County, from the time that office was first established. Since 1840 he was member of Massachusetts Medical Association and held various offices in that organization. He was for many years a member of the Masonic order, and was the first master of "Oriental Lodge" of Edgartown. For twenty years he was a member of the school committee. He also filled other important positions in the town. He was for many years an active, worthy and highly useful member of the Methodist Episcopal Church, holding the office of Superintendent of the Sunday school, member of the Board of Stewards, Treasurer of the Methodist Episcopal Church, Chairman of the Board of Trustees up to the time of his decease. He became a member of the American Medical Association in 1849.

Not only did Dr. Pierce present in his own person a high type of physical and intellectual manhood, but he also came of good stock. His great grandfather, Timothy Pierce, of Plainfield, Ct., was a Judge of Probate, a Colonel of Militia, and a member of the Governor's council; his great grandfather was Benjamin Pierce, of Brooklyn, Ct., a Captain in the Revolutionary War; his mother's father was Dr. Williams, a prominent physician of Mansfield, Ct.

Dr. Pierce married Miss Chloe McLellan, of Gorham, Maine, daughter of the late Alexander McLellan, Esq. As his own successors he leaves two sons—John N., a graduate of Wesleyan University and a member of the Massachusetts bar, and Franklin W., a graduate of Yale College and of the medical department of the University of the City of New York, now practising his profession in Barnstable, Mass.

J. N. P.

BOOK REVIEWS.

THE PRACTICE OF MEDICINE AND SURGERY APPLIED TO THE DISEASES AND ACCIDENTS INCIDENT TO WOMEN. By WM. H. BYFORD, A.M., M.D. Professor of Gynecology in Rush Medical College and the Woman's Medical College; Surgeon to the Women's Hospital, of Chicago, etc.; and by HENRY T. BYFORD, M.D., Surgeon to the Women's Hospital, of Chicago, Gynecologist to St. Luke's Hospital, etc. Fourth edition, revised, rewritten and very much enlarged, with over 300 illustrations. 8vo, pp. 800. Philadelphia: P. Blackiston, Son & Co. 1887. Chicago: W. T. Keener.

This standard work has been so long and so favorably known that it is only necessary to point out some of the new and original matter wherein it differs from the preceding edition. The limited and unsatisfactory instruction in special subjects given in the medical colleges of this country, make the addition of three chapters of a preparatory character of great value to the young physician and the student. Besides various interesting and original investigations these chapters contain information that can otherwise be acquired only by the reading of a number of different works, several of which are rather inaccessible and purchased by the specialist only.

In the chapter on lacerations of the perineum a critical study is made of fresh and cicatrized lacerations and various forms of denudation are described, each adapted to a particular lesion. The authors favor certain kinds of flap operations in which only cicatricial tissue is removed. The whole subject, so intricate to the student, is rendered remarkably clear by a number of original illustrations found throughout the book, which take the place of those familiar drawings seen in every work on gynecology. The subject of displacements of the uterus is treated in a comprehensive manner, occupying much more space than in former editions, as do likewise the chapters on oöphorectomy and diseases of the Fallopian tubes, all of which will be read with great interest by reason of the clearness of style and lucid manner in which they, as well as all of the chapters, are written. Among the great amount of new material contained in this edition, we may mention the senior author's method of treating cysts of the broad ligament, of draining of pelvic abscess per rectum,

of performing Alexander's operation, and an operation for shortening the sacro-uterine ligaments. Not all will agree with the recommendation to treat pelvic abscess through the rectum, nor to separate adhesions of the retroverted uterus through an incision in the cul-de-sac, yet in this age of innovation and rapid advance in surgery, new procedures must not be too hastily condemned.

To the many members of the medical profession throughout the country who are well acquainted with the ability, the knowledge and energy of Byford the younger, it will be a genuine pleasure to see his name on the title page as co-editor of the present edition.

The book, in brief, is a text book for the student, a guide to the practitioner, a counselor to the specialist, and an honor to the gynecological literature of America.

A THEORETICAL AND PRACTICAL TREATISE ON ASTIGMATISM. By SWAN M. BURNETT, M.D., Professor of Ophthalmology and Otology in the University of Georgetown; Ophthalmic and Aural Surgeon to the Garfield Hospital, and Director of the Ophthalmic and Aural Clinic at the Central Dispensary and Emergency Hospital, Washington, D. C. With 59 diagrams and illustrations. 8vo, pp. 245. St. Louis: J. H. Chambers & Co. 1887.

This work is the only one of its kind. It is devoted entirely to the study of the nature and correction of astigmatism. The subject is an important one not only to specialists but also to the general practitioner. The relation between so-called nervous diseases and errors of refraction has become generally recognized. Reflex annoyances dependent upon ametropia are daily observed, and the attention of physicians cannot be too forcibly drawn to the important role played by optical defects in the causation of these neuroses. The author has defined the fundamental principles necessary for a proper understanding of astigmatism, in a clear and concise manner; all the facts are treated in a popular style, enabling the student to grasp readily a subject usually considered difficult. In the chapter on the use of atropine for the detection of errors of refraction, the doctor emphasizes an opinion that latent hypermetropia of a low degree should not be considered abnormal, for, he says, "The result of an examination of the refraction of a large number of children ranging in age from a few hours to 10 and 12 years, seems to point to the fact that in the human eye we have from infancy to adult life a gradual evolution from the hypermetropic to the emmetropic and myopic condition." In many cases all of the hypermetropia is overcome by the natural tonicity of the ciliary muscle, which can not be regarded as pathological and interpreted as a muscular spasm. All methods of examination are reviewed. A special chapter is devoted to the investigation of the "shadow test," known as keratoscopy and retinoscopy; for which however the name of skiascopy (shadow-test) as suggested by M. Egger, is substituted. An appendix containing a statistical record of 806 astigmatic eyes will undoubtedly be of great value to scientific investigators in search of reliable material.

TREATISE ON DISEASES OF THE SKIN. By T. MCCALL ANDERSON, M.D., Professor of Clinical Medicine in the University of Glasgow. With colored plates and numerous wood engravings. Octavo. 650 pages. Cloth, $4.50; Leather, $5.50. Philadelphia: P. Blakiston, Son & Co. 1887.

This is the most recently published work on the subject and is worthy of a place among the other numerous text books on dermatology. The wide experience and eminent character of the author will command attention. His American publisher has made a handsome volume which it will illustrate with about seventy cuts. The scope of the work is the same as that of others on the subject. Particular attention is given to the discussion of diagnosis and treatment. It is a noteworthy fact that Dr. Anderson is not a specialist but a general practitioner. He has had, however, unusual opportunity for the study of diseases of the skin. 11,000 consecutive cases of various skin diseases are analyzed by the author. Considerable space is devoted to diseases of the hairs. Among other things we notice that in the healing of deep ulcers the author does not recommend sponge grafting which has been introduced by his fellow-countryman Dr. Hamilton, but thinks that such grafts often rather delay and retard healing.

MISCELLANEOUS.

THE NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION, will hold its fourteenth annual meeting in the City Hall, at Streator, Tuesday, December 6, 1887, beginning at 10:30 A.M.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM NOVEMBER 19, 1887, TO NOVEMBER 25, 1887.

Col. Glover Perin, Asst. Surgeon-General, retired from active service November 17. 1887, by operation of law. S. O. 268, A. G. O., November 17, 1887.

Col. A. K. Smith, Surgeon, assigned to duty as attending surgeon in New York City.

Lt.-Col. J. R. Smith, Surgeon, ordered for duty as Medical Director, Dept. of Dakota.

Major S. M. Horton, Surgeon, granted six months' leave of absence, on surgeon's certificate of disability.

Capt. W. H. Arthur, Asst. Surgeon, granted two months' leave of absence, with permission to apply for two months' extension, to take effect on the arrival at Ft. Niagara, N. Y., of Asst. Surgeon Paul R. Brown.

First Lieut. J. R. Kean, Asst. Surgeon, granted two months' leave of absence. to take effect about December 1. S. O. 269, A. G. O., November 18, 1887.

Capt. Paul R. Brown, Asst. Surgeon, ordered to Ft. Niagara, N. Y.

Capt. John O. Skinner, Asst. Surgeon, ordered to Ft. Ontario, N. Y.

Capt. Chas. Richard, Asst. Surgeon, ordered to post near Denver, Col.

Capt. E. C. Carter, Asst. Surgeon, ordered to Willet's Point, N. Y. S. O. 270, A. G. O., November 19, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING NOVEMBER 26, 1887.

P. A. Surgeon F. S. Nash, detached from duty at the Smithsonian Institute, and ordered to the Washington Navy Yard.